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LETTER DATED 31 JULY 1991 FROM THE SECRETARY-GENERAL
ADDRESSED TO THE PRESIDENT OF THE SECURITY COUNCIL

I wish to refer to my letter of 23 May (S/22637) in which I informed you that in pursuance of the mandate entrusted to me by paragraph 7 of resolution 598 (1987), I had asked former Under-Secretary-General Mr. Abdulrahim A. Farah to lead a team of experts to make an exploratory visit to the Islamic Republic of Iran for the purpose stated therein.

The team visited the Islamic Republic of Iran from 31 May to 21 June 1991. The preliminary report of the mission containing details of the reported damage to the country's infrastructure, the nature and status of the country's reconstruction efforts and the team's observations on the damaged sites and installations inspected is submitted herewith for the information of members of the Security Council.

The team will return to the Islamic Republic of Iran in the near future to complete its work.

(Signed) Javier PEREZ de CUELLAR

Annex

PRELIMINARY REPORT OF A UNITED NATIONS TEAM, APPOINTED BY THE SECRETARY-GENERAL IN ACCORDANCE WITH SECURITY COUNCIL RESOLUTION 598 (1987), PARAGRAPH 7, TO OBTAIN INITIAL INFORMATION AND DATA ON THE NATURE AND EXTENT OF THE DAMAGE SUSTAINED BY THE ISLAMIC REPUBLIC OF IRAN AS A RESULT OF THE CONFLICT BETWEEN THE ISLAMIC REPUBLIC OF IRAN AND IRAQ, AND ON THE STATUS OF THE FORMER'S RECONSTRUCTION EFFORTS

31 MAY 1991-21 JUNE 1991

Map 1

MAP NO. 3642.1 UNITED NATIONS
JULY 1991

EXECUTIVE SUMMARY

The United Nations mission to the Islamic Republic of Iran from 31 May 1991 to 21 June 1991 was in the nature of an exploratory mission to obtain initial information and data on the nature and extent of damage sustained by the Islamic Republic of Iran as a result of the conflict between that country and Iraq and on the status of its reconstruction efforts. Such information is necessary for the study of the question of reconstruction called for in paragraph 7 of Security Council resolution 598 (1987).

In addition to meetings with government representatives and technicians, the United Nations team carried out on-site inspections of a large number of localities and installations damaged during the conflict.

Of the country's 24 provinces, 5 became operational theatres of war and 11 others became targets of repeated attack by aircraft and missiles. These 16 provinces contained two thirds of the country's population of 50 million. The land war was fought mainly on Iranian territory, in an area that stretched 1,200 kilometres along the border and some 80 kilometres deep.

Both urban and rural centres, particularly those in the border zone, suffered the destructive effects of the war. Authorities reported that over 50 cities and towns and close to 4,000 villages suffered varying degrees of damage, including many that were levelled to the ground. In all, the total number of housing units destroyed was reported to be over 130,000, with an additional 190,000 severely damaged. The United Nations mission inspected a considerable number of these localities and was able to confirm the damage they had suffered.

The war has had a direct and tragic impact on the civilian population. According to government estimates, 14,000 civilians were killed and 57,000 wounded, of whom 37,000 are permanently disabled. In addition the authorities have to cope with the care and resettlement of nearly 1.25 million persons displaced by the war.

The authorities have estimated direct damage to the economic sectors at 30,811,414 million rials; indirect damage to the same sectors is estimated at Rls 34,535,360 million. Direct damage consists of services and production capacities destroyed as a result of the war; indirect damage covers services and production capacities that would have been exploited if the war had not taken place.

The oil industry, which is the country's most strategic industry and the lifeline of the national economy, suffered massive destruction. The Abadan oil refinery, among the largest in the world, was virtually destroyed. The destruction inflicted on the country's oil- and gas-fields and the devastation of Kharg Island - one of the world's largest oil-loading facilities - drastically reduced the nation's ability to generate sufficient resources to meet national needs.

To cope with this situation, the Islamic Republic of Iran accelerated its nation-wide reconstruction programme for the oil industry, as well as other sectors of the economy, soon after the cease-fire was declared. The Abadan refinery has been partially reactivated and is now producing 140,000 barrels a day of fuel, as against 630,000 at the outbreak of the war. Monumental efforts are being made to bring the Kharg Island seaport back to productive life, while in the Persian Gulf offshore drilling areas, where many production and drilling platforms were either destroyed or severely damaged, reconstruction work is under way.

The United Nations mission visited a considerable number of transport, power and telecommunication facilities damaged as a result of the war. Reconstruction was under way in many of the sites visited, although in some cases repair and rehabilitation had been delayed because of difficulties in obtaining vital components from abroad.

While an impressive amount of repair and reconstruction work has already been carried out in the transport sector (road, rail, ports and airfields) both during the war and since 1988, the United Nations mission observed that much of this reconstruction was done under war conditions and with improvized parts made from local or salvaged material. The consequence of this is that a great deal of the repairs carried out to date are "band-aid" solutions with limited life. The mission confirmed most of the damage inflicted on cities and the ports of Khorramshahr and Abadan as reported by the Government. The destruction of Khorramshahr has deprived the country of its principal commercial and passenger port. In this context, the Shatt al-Arab has been rendered useless by sunken ships, mines and explosives as well as siltation due to neglect.

Reduced capacity of major power stations and transmission lines because of war damage has prevented the generation of sufficient power to keep up with peak demand. This has led to extensive blackouts in the major industrial centres. Insufficient power, in turn, has handicapped reconstruction work and the resumption of operations in the industrial manufacturing sector, which suffered tremendous losses from the war. Almost 800 light and heavy industries were damaged or destroyed since the majority were located in the border provinces where the conflict was especially intense.

Agriculture, which is a mainstay of the economy in the western and southern provinces (the principal food-producing area of the country), also suffered heavily as a result of the conflict. Large areas of arable and cultivated land were destroyed by the construction of revetments, embankments and vehicle-holding grounds and by the heavy traffic of tanks and other military vehicles. These conditions were exacerbated by the extensive laying of minefields, which continue to endanger life and prevent the resumption of land improvement and cultivation. Consequently the basic structure of the plains has been greatly degraded and the soil's fertility has been seriously endangered. Moreover, salinization and waterlogging have also become prevalent because of the disturbance of river flow regimes.

A major casualty of this situation is the date industry. Damage has been so great that its consequences will be felt for the next 10 to 15 years. Out of 7 million trees under production in Khuzestan, over 3 million mature plants have been destroyed in Khorramshahr, Abadan and Shalomech representing a loss of 155,000 tons of dates per year of production.

The mission found that the damage inflicted on the country's infrastructure was of a magnitude and nature that will require several years of repair or reconstruction, and in consequence restoration of services and production to the level that prevailed at the outbreak of the war could be seriously delayed.

In its official submission the Government did not cover war damage to the social sectors, i.e. health, education and cultural sites. During the course of meetings with the authorities, some basic information was provided but more study of each sector needs to be undertaken.

The United Nations mission focused mainly on the damage inflicted on the country's infrastructure and on the steps taken by Government to repair the damage. The mission was not equipped to look into the question of indirect damage to the economy.

The Government provided some information on the nature and extent of reconstruction that has been undertaken. However, this relates primarily to the housing and human settlements sector. It did not provide details of the amount spent so far on reconstruction or on the restoration of its production capacities; neither was it possible within the limited time-frame to obtain information on reconstruction plans for rehabilitating damaged sites and installations.

The Government is well alive to the challenge inherent in this situation. It began pursuing a reconstruction programme soon after the outbreak of war and steadily expanded and revised its content to meet the requirements of the day. The programme's main objectives are the rehabilitation and revitalization of the environment, economy, industrial base and cities and villages damaged during the war. The reconstruction programme is effectively supported at the central, provincial and local levels by a broad-based organization composed of representatives of government, the provincial administration, urban and rural centres and citizen groups.

The mission was greatly impressed by the efforts and commitment of the Government and people of the Islamic Republic of Iran. A considerable amount of reconstruction has already taken place. However, much more remains to be done.

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INTRODUCTION

A. Terms of reference

1. In pursuance of paragraph 7 of Security Council resolution 598 (1987), the Secretary-General appointed a team of experts to carry out an exploratory mission in the Islamic Republic of Iran with the following terms of reference:

(a) To obtain initial information on the nature and extent of the damage sustained by the country's infrastructure during the conflict between the Islamic Republic of Iran and Iraq;

(b) To verify such information, to the extent possible, by on-site inspection;

(c) To collect other available information pertinent to a study of the question of reconstruction, bearing in mind paragraph 7 of resolution 598 (1987), i.e., that the Security Council recognizes the magnitude of the damage inflicted during the conflict and the need for reconstruction efforts, with appropriate international assistance.

2. Before leaving for the Islamic Republic of Iran on 29 May 1991, the team leader, Mr. Abdulrahim A. Farah, former Under-Secretary-General, met with the Deputy Permanent Representative of the Islamic Republic of Iran to the United Nations, Mr. M. Javad Zarif to discuss specific areas and sectors on which the Government wished the mission to focus its attention and to obtain advance information and data relevant to the mission's work.

B. Composition of the mission

3. The following provides the names of members of the team together with their sectoral assignments: Mr. Geoffrey Connor (United Nations Department of Technical Cooperation for Development), transport; Mr. Ignacio Armillas (United Nations Centre for Human Settlements), housing and human settlements; Mr. Lucien Vermeiren (Food and Agriculture Organization of the United Nations), agriculture and irrigation; Mr. William H. Crowe (consultant), oil, gas and petrochemical industries; Mr. Sadek Eid (consultant), industrial and manufacturing sectors; and Mr. Aidan Sweeney (consultant), power and telecommunications. Mr. Johan Schölvinck, (United Nations Department of International Economic and Social Affairs) served as Special Assistant and Coordinator.

4. The mission arrived in Tehran on 31 May and began its work the same day. During the initial phase meetings were held with the Vice-President for Executive Affairs, the Vice-President and Head of the Plan and Budget Organization, the Deputy Minister of Economics and Finance and the head of Persian Gulf headquarters, the office established to oversee the implementation of Security Council resolution 598 (1987). The meetings enabled the team to obtain a better understanding of the nature and magnitude

Map 2

MAP NO. 3642.11 UNITED NATIONS
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of the damage inflicted directly on the country's infrastructure by the war, as well as the measures taken by the Iranian authorities to repair or reconstruct damaged installations and localities.

5. In the second phase, meetings were held with individual ministries for the purpose of securing a better understanding of the economic sectors directly affected by the conflict. These included the Ministries of Housing and Urban Development; Energy and Water; Post, Telephones and Telegraphs; Agriculture; Transport; Industries; Labour and Social Affairs; the Interior; Education and Health; and the Department of Defence. In addition to these Ministries, the mission held meetings with the Vice-President of the Islamic Republic of Iran for broadcasting; the Head of the Foundation for Displaced People; the President of the Foundation for the Disabled; and the Director of the Housing Foundation.

6. Towards the end of the mission's stay in the Islamic Republic of Iran, its leader met with the Minister of Foreign Affairs, Mr. Ali Akbar Velayati, to inform him of the progress of the mission's work.

7. The mission completed its assignment in the Islamic Republic of Iran on 21 June 1991.

C. On-site inspection visits

8. In keeping with its terms of reference, the United Nations mission made extensive visits to the war-affected provinces of the country to inspect installations, facilities and industrial complexes as well as towns and villages that had sustained damage. The visits were organized by the Iranian authorities and were made during the period from 5 to 13 June. At all times, mission members were accompanied by Iranian technical counterparts whose job it was to point out the damaged sites and to explain, where appropriate, any measures taken for their repair or reconstruction. Maps showing the areas covered by each United Nations expert are reproduced in section III under the sector concerned.

9. In addition to individual inspections made by the experts, the team leader spent three days visiting the most seriously affected provinces of Khuzestan, Ilam and Bakhtaran by helicopter in order to acquaint himself with the situation on the ground and to obtain a general overview of the nature and extent of some of the major damage suffered. During his visit he received briefings from the Deputy Governor General for Khuzestan Province, the Governor General for Ilam Province and the Governor General for Bakhtaran Province.

D. Methodology

10. The terms of reference required the mission to undertake an exploratory mission as a prerequisite for the conduct of a study of the question of reconstruction within the framework of paragraph 7 of Security Council

resolution 598 (1987). Towards this end, the team was asked (a) to obtain full information on the nature and extent of the damage sustained by the country's infrastructure during the conflict; (b) to verify such information, to the extent possible, by selective sampling and on-site inspection; and (c) to ascertain the nature and status of the Government's reconstruction programme.

11. Within its limited time-frame the mission took a reconnaissance approach, confining itself to areas and locales where damage had been particularly heavy and, in some cases, to visiting sites where reconstruction was in progress. The mission focused its attention on the physical infrastructure, namely human settlements and housing; the oil, gas and petrochemical industry; agriculture; the industrial and manufacturing sector; power and telecommunications; and transport. This approach was consistent with the Government's decision to address in the first instance economic damage caused by the war.

12. In addition to its assessment of direct damage to the economic sector, the Government also assessed the amount of indirect economic damage which the country has sustained as a result of the war. The mission did not address itself to the issue of indirect damage. It was felt that such a study required the services of experts in macroeconomics.

13. During the course of a number of meetings, damage sustained by the social sector was touched upon, notably health, education and cultural heritage, as well as matters related to war-displaced and war-disabled civilians. Some preliminary information relating to these sectors is contained in section II 9 below. Further investigation will need to be undertaken to obtain a complete picture of the damage sustained and the reconstruction work necessary.

14. An extensive area of land was adversely affected by the war. The bulk of the damage occurred in the five western border provinces, namely: Khuzestan, Ilam, Bakhtaran, Kordestan and West Azarbayjan. Beyond these five provinces, damage was inflicted on strategically important urban centres and localities by means of air and missile attacks.

15. The mission obtained all of its data and background information on damaged sites from government sources, namely documentation handed over by government officials, and information provided verbally either at official meetings or by technical staff that accompanied team members during the inspection visits.

16. Since Iranian authorities had begun reconstruction as far back as 1983 and were still actively engaged in this process, the mission experienced difficulty in determining the nature and extent of original damage at sites or plants that had already been repaired or reconstructed. Some reconstruction activities contained a development component which took account of population growth as well as the need to improve and update facilities damaged or destroyed, particularly where the original technology had become outdated.

17. It had been the Government's policy during the war to repair or reconstruct damaged installations vital to the country's economic life as soon as possible after the damage occurred. In many instances the Government reported that facilities reconstructed during the conflict had been damaged or destroyed more than one time. The mission was not in a position to confirm such damage.

18. Although it was not part of the mission's brief to place a monetary value on war-related damage, where such estimates of cost were supplied by the Iranian authorities, these costs have been retained in the national currency (rial) because of different official and non-official exchange rates.

19. To achieve a uniform approach in all sectors with regard to the question of reconstruction, the mission endeavoured:

(a) To obtain wherever possible information and statistical data on conditions prevailing in each sector as of 1980;

(b) To collect, on a sectoral basis, all information and data pertaining to major war-related damage and to the reconstruction programme;

(c) To carry out on-site inspections of damaged and reconstructed sites and installations;

(d) To describe all visible damage in qualitative rather than quantitative terms, e.g. light, moderate, severe and heavy;

(e) To compare the reconstruction work of a particular site with photographs taken at the time the damage occurred or before the work began.

E. Official meetings and documentation

20. The United Nations mission held official meetings with Government representatives at the national, provincial and local levels. A list of the meetings held by the Team Leader and by the United Nations experts concerned is attached as appendix A.

21. The mission requested and received various documents from the Government of the Islamic Republic of Iran containing background information pertaining to damages and losses sustained as a direct result of the war, as well as data relating to national reconstruction. The fact that a number of documents were in Farsi presented some difficulties since the team did not include an official translator or interpreter fluent in Farsi and English, and it was not possible to recruit such a person locally. While the Government arranged for a number of the documents to be translated into English, the more important ones still await translation. A detailed list of documentation submitted to the mission is attached as appendix B.

I. GOVERNMENT ASSESSMENT OF WAR-RELATED DAMAGE AND RECONSTRUCTION ACTIVITIES

A. Overview

22. The war has cost the Islamic Republic of Iran heavily in human and material terms since it was fought mainly within its territory. Shortly after the outbreak of the war in September 1980, almost 20,000 square kilometres of Iranian territory came under Iraqi occupation. A 1,200-kilometre-long area along the border with Iraq had been affected by the conflict and another 96,000 square kilometres of the country came under constant attack.

23. Out of a total of 24 provinces, 5 became active theatres of war (Khuzestan, Ilam, Bakhtaran, Kordistan and West Azarbayjan) while 11 others were repeated targets of attack by aircraft and missiles.

24. These events created adverse consequences for the national economy and the environment, as well as for the affected population and they continue to constitute a serious impediment to the restoration of normal conditions. The damage to the country's infrastructure is so extensive that it will take several years to bring services and production to the levels that prevailed at the outbreak of the war. The war has compromised economic and production capacities so seriously that, even when the pre-war level is attained, the Islamic Republic of Iran will be years behind in its development unless major resources and technical assistance are made available at the present stage.

25. Despite the fact that the Government assigned top priority to the repair and reconstruction of damaged infrastructure throughout the war years, it was inevitable that the war would result in a major decline in economic activity.

26. Consumption and prices had to be controlled and the Government had to borrow heavily from the Central Bank. Gross domestic product (GDP) in constant prices declined from 3,127 billion rials in 1979 to Rls 2,843 billion in 1988. Similarly, consumption expenditures in constant prices declined from Rls 2,162 billion in 1979 to Rls 2,048 billion in 1988. Per capita consumption expenditures plunged by 30 per cent from Rls 54,000 per person in 1979 to Rls 39,000 in 1988. There was also a marked decline in investment from Rls 575 billion in 1979 to Rls 294 billion in 1988 (in constant prices).

27. The eight-year war has had particularly severe consequences for the oil industry. The bombing of Abadan, the world's largest oil refinery, shut down 75 per cent of the country's ability to manufacture its own petroleum products. Destruction in the oil- and gas-fields and the devastation at Kharg Island strangled the nation's ability to generate revenue.

28. Enormous quantities of petroleum resources continue to burn in the production fields today because of destruction of major machinery and equipment, which requires years to replace. Massive petrochemical projects destined to generate revenue were destroyed in place, setting development back 10 years. Many oilfields were set afire and, even after the cease-fire,

three oil wells in Dehloran burnt for over two and a half years. The direct damage inflicted on the oil industry amounts to Rls 7,382,675 million.

29. In the energy sector, severe damage was sustained by power stations and the transmission network. This has caused and continues to cause load-shedding blackouts and severe disruption of power to industry.

30. In another sector, damage to the satellite Earth station virtually isolated the Iranian telecommunication network from the rest of the world for a considerable period of time. This led to a disruption of services to commerce and industry, while damage to local networks isolated affected communities from the nation as a whole.

31. As in other areas of the economy, the war has resulted in significant damage to the industrial sector. The majority of heavy and light industries were located in the war-stricken regions of the country, notably Khuzestan and Bakhtaran. The industrial units became the targets for shelling and aerial attacks. The estimated loss suffered by the industrial sector as a result of these attacks amounted to Rls 1,626,860 million. Indirect damage to this sector amounts to Rls 851,839 million. Throughout the conflict every effort was made to repair and reconstruct damaged factories and plants whenever this was possible, very often at great expense and effort. A great number of small industries were totally destroyed, while 40 per cent of the steel industry was heavily damaged, resulting in the halting of production for significant periods.

32. The transport sector, which embraces the four main arteries of the State, i.e. ports, roads, rail and airports, constitutes the lifeline of the economy. The total destruction of the ports of Khorramshahr and Abadan has not only deprived the economy of their facilities, but has caused the economic life of these cities, as well as of their hinterlands, to come to a complete standstill. The Shatt al-Arab has been rendered useless by sunken ships, mines and explosives and by siltation due to war-imposed neglect. Massive reconstruction and rehabilitation will be required.

33. Hundreds of kilometres of roads and dozens of bridges have been destroyed or severely damaged. Many runways at airports sustained major damage as a result of aerial bombardments starting from the first day of the war, while the rail track connecting the ports to the rest of the country has been completely destroyed.

34. With the exception of the two ports, repairs and reconstruction have commenced, although in some cases the work has been of a temporary nature because of the need to import vital components. Years of unavoidable neglect have worsened the general condition of the transport sector in the war-stricken areas, thereby adding to its reconstruction requirements.

35. The amount of damage sustained by the agricultural sector has been estimated at Rls 1,783,378 million. Hundreds of thousands of hectares of good fertile land have been destroyed. Traditional irrigated agricultural land for

dates, which for centuries has been highly productive, has been subjected to salinity and waterlogging, which may well worsen the situation in future years. In addition, millions of date palms have been burnt. River regimes have been modified and rivers and canals have silted.

36. Topsoils have been severely disrupted through the construction of embankments and revetment in the war theatre. Thousands of hectares have been mined, posing permanent risk to farmers who want to return to their land. Rural settlements have been levelled by tanks and other military hardware. Under these hostile conditions, it will take many years to bring agriculture back to its productive pre-war life.

37. During the war, 51 cities and towns and close to 4,000 villages suffered varying degrees of damage, including total destruction in many cases. The total number of housing units destroyed amounts to 130,611 with an additional 190,777 having sustained a severe degree of damage. In the business sector, the losses amount to 20,513 commercial units destroyed and another 25,918 damaged. Losses suffered by health, educational and other service facilities have also been high, as is the case for government buildings.

38. The massive destruction of human settlements has engendered widespread population displacements. At the height of the hostilities about 2 million people were displaced. Today 1.24 million people remain in this category. This displacement was the result of (a) the occupation of a number of cities and villages by Iraq, (b) the abandonment of cities located in the theatre of war and (c) movements from nearby cities that came under land and aerial bombardment. Cities beyond the area of hostilities experienced an influx of population that has taxed the existing infrastructure to the utmost.

39. The damage inflicted, through bombardments, on historical monuments and archeological sites - mainly in Esfahan and Susa - is much more difficult to assess as the bombardments have reduced the effective life-span of these priceless symbols of the old Iranian culture and history.

40. The Government's final report on the estimate of losses addresses itself only to an assessment of economic damage arising from the war and does not take into account human losses, for the reason that no such quantification is possible by Islamic and human standards. The mission was able to obtain some data quantifying the consequences of the war with regard to the labour force, i.e. numbers killed, wounded, permanently disabled and rendered homeless.

41. The war caused the death of 14,000 civilians and, out of a total of 411,000 permanently disabled men, women and children, 37,000 are civilians. Many more lost their houses and jobs, and over 2 million were forced to move away from their homes. Large numbers still live in camps or other temporary housing.

42. The presence of mines in many rural and urban areas is one of the country's most urgent and critical problems. Mine-clearing is being hampered by the lack of maps showing the location of the mines and a shortage of

appropriate equipment. Consequently, mines are being cleared manually. The army has undertaken the task, and so far 1,600 personnel have been killed or wounded. The extent of the minefields, estimated at 1 million hectares, and the fact that many of the mines have become deeply embedded in the soil or have shifted position further complicates their detection and retrieval.

43. Since the cease-fire, some 800 civilians have been killed or maimed by mines. Most of the mines are in agricultural and grazing areas. Consequently, most of the casualties have been among farmers as well as children who, very often, are not aware of the lethal nature of the mines.

44. The Government has accomplished its first task of clearing residential areas of mines. The border areas, however, still need clearing and, without maps and equipment, it will take many years to complete. In order to speed up this process, the Government requires the help of the United Nations in securing the maps and in providing technical assistance and equipment for mine-clearing operations.

45. It should be noted that the long duration of the war has further complicated its damaging effects. With a population growth rate of close to 3.5 per cent per year, much has changed since the beginning of the war. The population of the affected provinces has increased, placing additional demands on the infrastructural needs in these areas as well as on the economy of the country as a whole. The problem has been further exacerbated by the influx of more than 1.2 million Iraqi refugees, which has imposed further financial and administrative burdens on the Government. There is an abundance of human resources, but financial resources, technology, and parts are severely undersupplied. It is in these latter areas where international assistance will be needed most so that reconstruction can succeed and development can once again resume.

B. Official assessment of damage

46. On 16 June 1982, the Council of Ministers instructed various government organs and units to collect data on the damage incurred as a result of the war. Fact-finding groups were set up in various ministries and organizations.

47. In view of the fact that the research took different forms in various ministries and organizations, and in the private sector in some cases, and that it could not therefore be of a uniform nature, a decision was taken after careful study, to set up three principal committees, as follows:

(a) The Legal Committee, to study the legal and international aspects of the problem under investigation;

(b) The Military Committee, to study and estimate the losses sustained by the armed forces (military and police);

(c) The Economic Committee, to study and estimate the country's financial and economic losses.

48. The above committees were charged with the responsibility of carrying out a comprehensive investigation of the above matters and determining the extent of the damage, taking all factors into account.

49. The Economic Committee, responsible for estimation of the damage arising from the war, was set up within the Plan and Budget Organization. By March 1987 this Committee had compiled an estimate of damage, based on reports received from all the responsible organizations concerned, the results of which were published in eight volumes.

50. The Economic Committee decided, upon review of the data available in 1987, to change the methodology used for assessment in favour of an economic model based on the United Nations System of National Accounts. The new method, which was eventually adopted following the establishment of the cease-fire in August 1988, was designed to facilitate the following:

(a) Determination of the economic damage as envisaged in paragraph 7 of United Nations Security Council resolution 598 (1987);

(b) Establishment of a macro-planning and sectoral approach for the purpose of reconstruction;

(c) Assessment of economic damage on a sectoral basis, consistent with SNA, and the allocation of resources for reconstruction.

51. In evaluating the economic damage two main categories have been considered:

(a) Direct damage. This consists of services and productive capacities destroyed as the result of direct attack. They are categorized as:

(i) Buildings and installations;

(ii) Machinery and equipment;

(iii) Materials and goods;

(b) Indirect damage. This covers service and productive capacities that would have been exploited if the war had not taken place. This type of damage also includes resources diverted for national defence during the conflict period which otherwise would have been utilized to create extra capacities within the economic sectors.

52. The methodology established to collect, verify and tabulate data was developed by the Plan and Budget Organization. After any attack the Committee in the concerned sectoral ministry would address a detailed six-part questionnaire prepared by the Plan and Budget Organization to the affected facility. This unit would complete the questionnaire and forward it to the local office of the concerned ministry, which would clear the data and forward it to the provincial level which would, in turn, verify the information and

forward it to the national-level ministry. If this ministry was satisfied with the accuracy of the data, it passed it on to the Committee at the Plan and Budget Organization for final review and assessment and incorporation into the national accounts. If at any stage there were questions on the accuracy of the information, the questionnaire was sent back to the previous level for verification.

53. The results, listing damage in each sector of the economy, were published in 1990 and accord with the format followed by the country's system of national accounting. The following is a summary of the findings of the Economic Committee as contained in the 1990 volume. Details are available on these findings both in national published files as well as unpublished files available at the Plan and Budget Organization.

54. Direct damage, estimated to equal Rls 30,811,424 million, includes:

	Percentage
Buildings and installations	32.2
Machinery and equipment	31.0
Materials and goods	36.8
Total	100.0

Table 1. Direct damage by province

(In millions of rials)

Khuzestan	10 558 659
Lorestan	1 052 804
Ilam	726 940
Tehran	724 822
Bakhtaran	582 888
Sistan and Baluchestan	315 077
West Azarbayjan	307 567
Khorasan	272 052
Markazi	251 329
Esfahan	171 626
Semnan	154 615
Zanjan	115 592
East Azarbayjan	84 394
Fars	46 249
Hamadan	32 126
Kordestan	26 361
Mazandaran	25 332
Bushehr	18 440
Guilan	16 710
Yazd	12 672
Hormozgan	11 613
Chaharmahil and Bakhhiari	9 750
Kerman	2 851
Kohkiluyeh and Bovir Ahmadi	871
Common services a/	15 290 083
Total	30 811 424

Source: Islamic Republic of Iran, Plan and Budget Organization.

a/ Common services at the national level shared by all provinces, e.g. civil defence, public services and utilities.

Table 2. Direct damage to economic sectors

(In millions of rials)

Agriculture	1 783 378
Mines	35 790
Industries	1 626 860
Oil	7 382 625
Utilities	1 313 735
Construction	275 488
Services	18 393 548
Total	30 811 424

Source: Ibid.

55. Indirect damage, estimated at Rls 34,535,360 million, includes facilities and capacities that could have been utilized had there not been war. This type of damage also included resources allocated for defence purposes that would otherwise have been utilized by the economic sectors.

Table 3. Indirect damage to economic sectors

(In millions of rials)

Agriculture	14 173 955
Mines	23 410
Industries	851 839
Oil	13 416 915
Utilities	1 634 922
Services	4 434 319
Total	34 535 360

Source: Ibid.

C. Reconstruction objectives and priorities

56. The main objectives of the Government's reconstruction programme are the reconstruction, rehabilitation and revitalization of the environment, economy, industrial base and the cities and villages damaged during the war. Accordingly, the reconstruction of larger industries such as refineries, petrochemical complexes, power plants, factories and other industries has been assigned special priority consistent with their role in the national economy. Another objective is the provision of investments for economic, social and cultural development in the war-affected areas to enable their rapid recovery and to accelerate and facilitate the return and resettlement of the displaced in their home environment. The reconstruction of the housing sector will be one of the important and dominant parameters in the reconstruction programme.

57. The relocation of settlements and the assimilation of villages by cities is being avoided as far as possible. The current strategy is to stabilize settlements, while reforming their structures when necessary, and to repair and renovate whenever possible utilizing to the utmost materials and infrastructure that have escaped damage. Particular care has been taken in the planning to respect what the people have done or are doing through their own efforts.

58. The reconstruction programmes are not viewed as unchangeable principles and ample provision has been made for revision in programmes when needed. In fact, there is a continuous search to find more efficient methods of rehabilitation and reconstruction while increasing popular participation.

59. Within the above-stated objectives the Government has set out the following priorities for action:

(a) Reconstruction of residential, educational, health and commercial units in cities, towns and villages located in the war-damaged areas;

(b) Provision of infrastructure such as water, electricity, and sanitation in war-damaged residential areas, with a view to accelerating the resettlement process and in preparation for the future development of the areas;

(c) Revitalization of the economy through the regeneration of productive employment, particularly through the rehabilitation of agricultural land and the reconstruction and rehabilitation of industries within the war-damaged areas;

(d) Repair and reconstruction of existing communication networks, including roads, bridges and telecommunications;

(e) Repair of damaged historical and cultural sites and monuments.

D. National reconstruction programme

60. The Government embarked on its reconstruction programme during the early stages of the conflict, thus making it possible for a great deal of reconstruction work to be carried out while the war was in progress. In the occupied areas, reconstruction commenced as soon as an area returned to its control. For example, following the liberation of Khorramshahr and other important territories, reconstruction activities were initiated in May 1983. As some areas changed hands several times during the long-drawn-out conflict, reconstruction and rehabilitation of many buildings and facilities had to be repeated several times. Since the cease-fire came into effect, there has been a marked increase in reconstruction activities in all war-affected provinces.

61. The reconstruction of the country's devastated infrastructure has required a multidimensional effort. The following statistics illustrate the magnitude and nature of the reconstruction programme:

(a) Approximately 12.6 million square metres of housing and about 7.3 million square metres of commercial, administrative and urban services buildings have been constructed for 158,431 war-damaged or displaced households who have returned or have been resettled in their own cities and villages since October 1988. During the same period, public funds totalling Rls 800 billion have been spent for the reconstruction of these areas;

(b) Almost 130,000 displaced households have yet to return to their cities and villages. Their return will be realized before the end of the present socio-economic five-year development plan;

(c) Sixteen war-damaged cities (including surrounding villages) in the conflict zone and 35 cities that were attacked from the air have been reconstructed during the past years. The reconstruction of another 16 cities and adjacent villages is in progress. Many of the cities mentioned above were damaged in the course of the "War of the Cities". Since October 1990, following completion of withdrawal of Iraqi forces from Iranian territory, nine towns have been prepared for reconstruction, and mine-clearing operations in their vicinities have already started.

Table 4. Reconstruction status of war-damaged areas, 1981-1990

Location			Status		
War-stricken areas	Other affected areas	Province	C a/	W b/	P c/
	Masjed Suleyman	Khuzestan	+		
	Behbahan	Khuzestan	+		
	Bandar-e-Emam Khomeyni	Khuzestan	+		
	Shadegan	Khuzestan	+		
	Mahshahr	Khuzestan	+		
	Aghajari	Khuzestan	+		
	Ramhormoz	Khuzestan	+		
	Shushtar	Khuzestan	+		
Qasr-e-Shirin		Bakhtaran		+	
Khosravi		Bakhtaran			-
Sumar		Bakhtaran			-
Naftshahr		Bakhtaran			-
Paveh		Bakhtaran	+		
Javanrud		Bakhtaran	+		
Sar-e-Pol-Zahab		Bakhtaran		+	
Guilan-e-Gharb		Bakhtaran		+	
Eslamabad		Bakhtaran	+		
	Bakhtaran	Bakhtaran	+		
Abadan		Khuzestan		+	
Arwand Kenar		Khuzestan		+	
Khorramshahr		Khuzestan		+	
Minou Island		Khuzestan		+	
Howeyzeh		Khuzestan	+		
Shush		Khuzestan	+		
Susan-Guerd		Khuzestan	+		
Bostan		Khuzestan		+	
Rafe'i		Khuzestan		+	
	Ahwaz	Khuzestan	+		
	Andimeshk	Khuzestan	+		
Dehloran		Ilam		+	
Musiyan		Ilam			-
Mehran		Ilam		+	
Ilam		Ilam	+		
Chavar		Ilam	+		
	Kamyaran	Kordistan	+		
Marivan		Kordistan	+		
	Saqqez	Kordistan	+		
Baneh		Kordistan	+		
	Qhorveh	Kordistan	+		

Table 4 (continued)

Location			Status		
War-stricken areas	Other affected areas	Province	C a/	W b/	P c/
Nosrud		Kordistan			-
	Tehran	Tehran	+		
	Qom	Tehran	+		
	Karaj	Tehran	+		
	Zanjan	Zanjan	+		
	Arak	Markazi	+		
	Khomeyn	E. Azarbayjan	+		
	Tabriz	E. Azarbayjan	+		
	Maragheh	W. Azarbayjan	+		
	Mahabad	W. Azarbayjan	+		
Sardasht		W. Azarbayjan	+		
Nagadeh		W. Azarbayjan	+		
Oshnaviyeh		W. Azarbayjan	+		
	Salmas	W. Azarbayjan	+		
	Orumiyeg	W. Azarbayjan	+		
	Miyandoab	W. Azarbayjan	+		
Bukan		W. Azarbayjan	+		
	Sa'indij	W. Azarbayjan	+		
	Khorramabad	Lorestan	+		
	Aligudarz	Lorestan	+		
	Dorud	Lorestan	+		
Puldukhtar		Lorestan	+		
	Hamadan	Hamadan	+		
	Nahavand	Hamadan	+		
	Tuysarkan	Hamadan	+		
	Borujerd	Hamadan	+		
	Malayer	Hamadan	+		

a/ Completed.

b/ Work in progress.

c/ Pending.

Table 5. Progress report on reconstruction of major industrial and infrastructural projects damaged by war

Industrial unit	Status
Petrochemical industrial complex of Emam Khomeyni Port	WIP a/
Khargh Petrochemical Industrial Complex	C b/
Refineries of Tehran, Tabriz, Esfahan, Bakhtaran	C
Khargh installations	WIP
Kangan gas plant	C
Arak aluminium plant	C
Iranian national steel industries	C
Radio stations of Ahwaz-Bakhtaran	C
Paper industry of Pars	C
Durud and West cement plants	WIP
Port of Khorramshahr	WIP
Shahid Ghandi Telecommunications Complex	WIP
Power stations of Arak, Mahshahr, Omidiyeh	C
Pasteurized milk industrial complex	C
Urban distribution networks	WIP
Karkheh irrigation network, Darkhwein irrigation installation and implementation of the comprehensive irrigation plans	WIP
Razi petrochemical complex	C
Abadan refinery	WIP
Liquid gas refinery of Mahshahr	C
Marun gas injection plant	C
Esfahan steel mill	C
Nasr steel plant	C
Arak Azar-A'ab industries, Pars automobile and wagon manufacturing complex	C
Abadan transmitters plan	WIP
Ahwaz-Khorramshahr railways	WIP
Emam Khomeyni Port	C
Airports of war-stricken provinces	WIP

Table 5 (continued)

Industrial unit	Status
Power plants of Nikah, Shahid Montazeri, Shahid Salimi Ramin, Zargan, Tabriz	WIP
Haft-Tapeh and Karun agro-industrial complexes	WIP
Power lines	WIP
Power stations	WIP
Installations of Abbaspur and Daraz dams	C

Note: Some major and essential projects have not begun for lack of resources, legal problems or because the areas are still not clear of explosives.

a/ "Work in progress" has been implemented in different phases. Some of these phases have been completed and are now in operation.

b/ Completed.

E. Organizational arrangements for the reconstruction and rehabilitation of war-damaged areas

62. The reconstruction process is carried out at the national, provincial and local levels as well as with voluntary popular participation. At the national level reconstruction covers major projects such as the energy, industries, ports and roads subsectors, etc., which are executed by the ministries concerned. The provincial and local levels include projects for rural and urban services, while regional development plans are executed by the pertinent government agencies in the war-damaged areas. The popular participation level includes reconstruction of the rural and urban residential and commercial units that will largely be executed by the people of the regions assisted by volunteers from non-war-stricken areas and with government support and assistance.

63. Reconstruction and rehabilitation of the war-damaged areas fall under an organizational framework that can be summarized as follows.

1. Supreme Council for Reconstruction

64. The Supreme Council for the Reconstruction and Renovation of the War-Damaged Areas is responsible for overall supervision of the reconstruction and rehabilitation processes, as well as the return of the war-displaced population. The Council is also responsible for the provision of the necessary guidelines to the implementing organs and for the promotion and direction of popular participation in the reconstruction process.

2. Reconstruction headquarters

65. Reconstruction headquarters is charged with the determination of priorities and general policies for reconstruction. It also directs the relevant organs and institutions towards the achievement of general reconstruction objectives, with the additional task of supervision over, and the follow-up of, the implementation of approved programmes. Reconstruction headquarters also ensures coordination among the various provinces under reconstruction.

3. Reconstruction headquarters for the executive sectors

66. Reconstruction headquarters stationed at ministries and executive bodies were formed to:

(a) Cooperate and coordinate with committees on reconstruction programming;

(b) Supervise project administrators;

(c) Distribute necessary resources and facilities;

(d) Coordinate the administrators' activities;

(e) Equip and strengthen the public administration's human resources.

4. Reconstruction headquarters for provinces and towns

67. These headquarters are entrusted with the task of determining reconstruction and rehabilitation priorities for the implementation of plans in accordance with approved policies and programmes. Among the significant tasks of those headquarters are:

(a) Selection of projects and plans and the assignment to bodies involved in reconstruction;

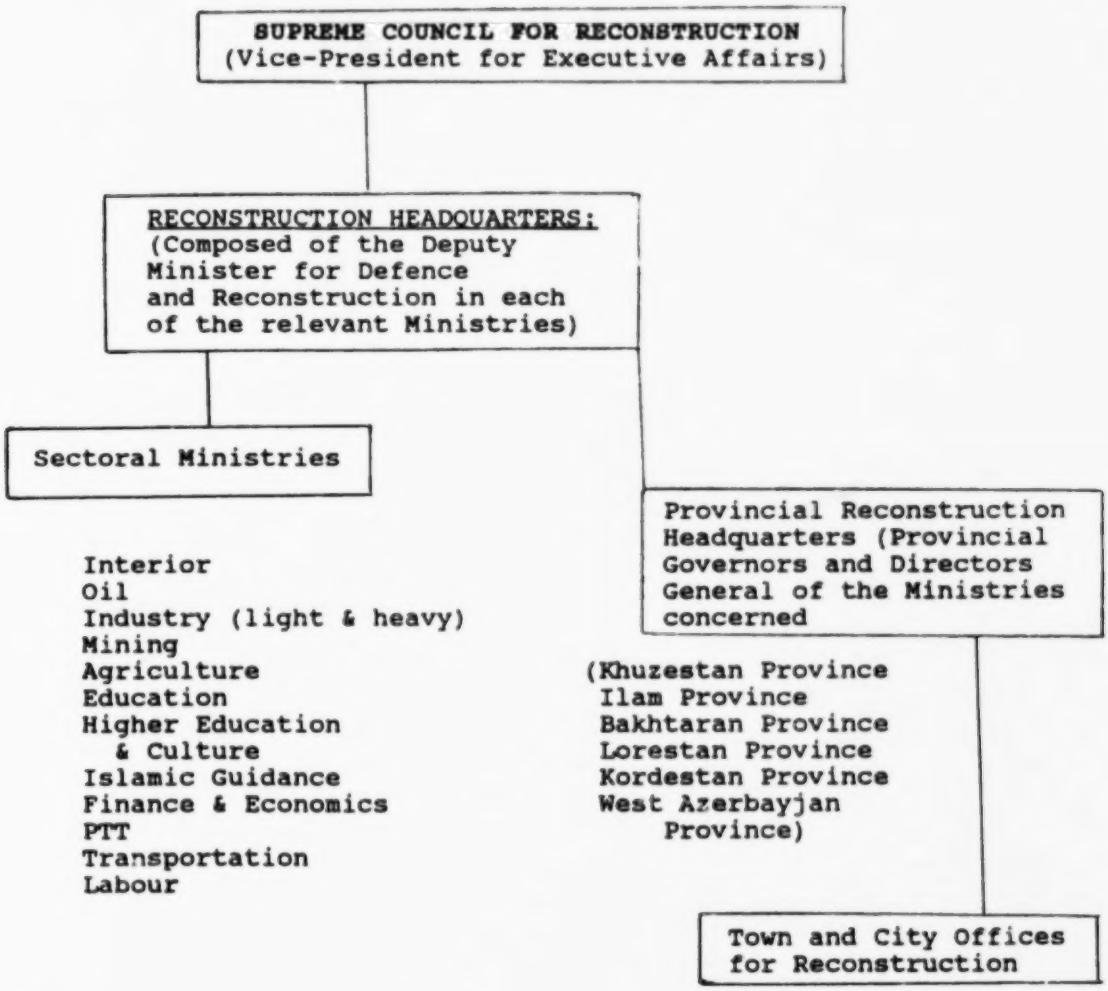
(b) Coordination of the implementation of provincial and town plans;

(c) Formation of technical and specialized committees;

(d) Mobilization of facilities in provinces and in towns.

68. The following diagram illustrates the operational relationship between the various organizations.

DIAGRAM ILLUSTRATING OPERATIONAL RELATIONSHIPS BETWEEN THE VARIOUS BODIES ENGAGED IN RECONSTRUCTION



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F. Human dimension

1. Impact of the war on the civilian population

69. In calculating the damage inflicted on the national infrastructure as a consequence of the war, the Government has confined its assessment to economic damage. The assessment does not reflect the dire consequences that the conflict has entailed for the civilian population in terms of numbers killed, permanently disabled and displaced, nor does it include losses to private property.

70. The adverse impact of the war on the civilian population can be gauged by the fact that, apart from widespread destruction of private and public property, it resulted in over 14,000 persons being killed and over 57,000 wounded, of whom 37,000 sustained permanent physical disabilities. An even larger segment of the civilian population has been indirectly affected by war casualties, both civilian and military. Large numbers of families have lost their breadwinners and are obliged to rely on government help for their livelihood.

71. At one stage during the conflict, more than 2 million inhabitants belonging to the border provinces were displaced and many forcibly moved into Iraq by the occupation forces. In recent years circumstances have enabled a substantial number of displaced persons to return to their homes, while others have resettled elsewhere in the country. But the majority still remains homeless. At the present time, over 1.2 million displaced persons are living in camps and temporary settlements and continue to depend on a government stipend for their primary needs. Despite the efforts of the Government and a budget of about Rls 60 billion per year allocated to meet the needs of the displaced, their living conditions leave much to be desired.

72. Moreover, the social problems caused by the emergence of large numbers of single or parentless households as a direct result of war, the emotional and social needs of the disabled population, particularly among women and children and the social consequences of displacement present immense problems that are extremely difficult to ascertain and quantify.

73. A problem that becomes increasingly apparent as each day passes is the impact that the war has had on the psychological and emotional condition of large numbers of people in the war-stricken areas and in towns and cities beyond the war front that had been subject to aerial or missile attacks. Increasing numbers of cases of post-traumatic disorder and depression continue to be brought to the attention of the health authorities. The number of heart attacks due to stress as well as suicides, which have traditionally been very uncommon owing to the religious beliefs of the population, has increased alarmingly in border provinces and in the cities that were targeted during the war.

74. The presence of extensive minefields and the widespread presence of explosive devices left over from the war are adding to the misfortunes of the population in the war-ravaged areas. Since the cease-fire in 1988, 800 civilians have been killed and many others maimed after coming into contact with these devices. At present, an average of two civilians lose their lives or become permanently disabled each day as a result of uncleared minefields and other explosives.

75. The official policy of the Government of the Islamic Republic of Iran is to encourage the voluntary return of the displaced population to their original places of residence. In order to prepare the grounds for the return of the displaced population, the Government has assumed responsibility for the provision of public, social and infrastructural facilities, as well as technical and managerial services. Furthermore, the Government has assumed responsibility for the levelling of land in battle-scarred areas, the clearance of mines and the dredging of streams and irrigation canals.

76. The Government also endeavours to provide employment opportunities through grants, low-rate loans and educational and vocational facilities. Special low-rate loans and subsidized construction material are also available for the establishment of small factories. Furthermore, displaced families, on return to their homes, are helped to establish trades and small businesses. A lump sum equal to one year's stipend is allocated to the displaced to facilitate their resettlement.

77. It is expected that a large number of the inhabitants of the war-damaged areas who have gained employment and housing opportunities in places other than the war-damaged areas may voluntarily choose to settle down permanently in their new environments. These are mostly displaced people who did not own residential or commercial units in the war-damaged areas.

78. People in the war-damaged areas whose homes have been destroyed can seek help from the Government under its programme for the reconstruction and renovation of urban dwellings. The programme enables an applicant to receive a payment of a maximum of Rls 6 million, in addition to building materials for at least 60 square metres and a maximum of 120 square metres of area under construction. This covers about 50 per cent of the necessary expenses for reconstruction. Low-rate loans guaranteed by the Government are also available to finance the balance.

79. For commercial establishments, the programme provides a payment of maximum Rls 1.5 million/per unit for reconstruction and renovation of trade and service facilities. In the case of applicants requiring assistance for the reconstruction and renovation of productive units (agriculture, livestock, cottage industries), the Government payment of a maximum of Rls 6 million, and building materials are provided at the official rates.

2. Citizen support groups

80. Beyond the government structure for reconstruction efforts a number of other organizations provide assistance to the war victims. Some of the more prominent organizations are described below.

81. The Martyrs' Foundation provides economic and other assistance to the families of the civilian and military personnel killed as a consequence of the war. This Foundation also runs special schools, hospitals and orphanages.

82. The Foundation of the Oppressed and the Disabled provides assistance to the disabled civilian and military who suffered disabilities as a result of the war. It provides full medical and rehabilitation services in its 20 hospitals and dental clinics as well as through all other medical facilities in the country. It brings in foreign specialists as needed and runs two special clinics abroad. The Foundation gives a monthly pension to all disabled according to their degree of disability and provides educational and employment opportunities to enable them to become self-reliant.

83. The Foundation for the Displaced Population provides housing, education and health facilities for the displaced. It pays a monthly stipend for each member of a displaced household.

84. The Housing Foundation of the Islamic Revolution prepares and implements housing programmes for low-cost urban and rural housing, including the war-affected areas. It is also involved in land allocation and pilot development programmes as well as building materials' production and the control of market prices.

85. The Imam Khomeini Relief Committee collects public donations and provides emergency financial assistance to needy families of war victims along with other needy segments of the population.

II. SECTORAL FINDINGS BY UNITED NATIONS TEAM

A. Human settlements and housing

1. Overview of the sector

86. The western third of the territory of the Islamic Republic of Iran is the most densely populated part of the country. From the shores of the Caspian Sea in the north down the fertile valleys of the Zagros Mountains to the plains of Khuzestan Province, the region is rich in agriculture. Moreover, most of the petroleum exploitation in the country is in this region, as are the major refineries. This is also the most industrialized part of the Islamic Republic of Iran.

87. With the exception of Tehran, where over 10 per cent of the population is concentrated, and two other small areas along the Caspian Sea that have a particularly high population density, the settlement pattern centres on cities ranging in population from between 350,000 to 1 million. Each city in turn has a hierarchical structure of towns and villages within its hinterland. This well-balanced settlement pattern has developed over time and is the result of economic forces adapting themselves to the geography and environment of the region.

88. It is this western region that was most directly affected by the war, including those parts contiguous to the border, which for varying periods were occupied by enemy forces. Government sources indicated that within the first few weeks of the war almost 20,000 square kilometres of Iranian territory stretching along the entire 1,210-kilometre land border and in some places reaching inland as deep as 80 kilometres came under occupation by Iraqi forces for varying periods of time.

89. The provinces directly affected by the conflict were West Azarbayjan, Kordestan, Bakhtaran, Ilam and Khuzestan. At the outbreak of the war, these five border provinces contained nearly 4,000 villages and 15 towns and cities. Large areas became battlegrounds for the opposing forces with all of the destruction that war entails. Areas beyond the scene of land-force engagement were subjected to air and artillery attacks, requiring extensive reconstruction and rehabilitation, while many cities and towns lying beyond the border provinces were targeted for aerial and missile attacks.

2. Impact of the war on human settlements and housing

90. According to government sources, at the peak of hostilities over 2 million persons were rendered homeless and became displaced. This displaced population can be classified into two groups: (a) the temporarily displaced following bombardment of their cities, towns and villages, but able to return to their homes within a short period of time; and (b) the permanently displaced because of the destruction or enemy occupation of their cities, towns and villages.

Map 3

MAP NO. 3642.8 UNITED NATIONS
JULY 1991

91. The Iranian authorities estimate that, at the present time, there are about 1.24 million displaced people. Of this total 450,000 are living in and around the city of Ahwaz in Khuzestan Province, 200,000 in Bakhtaran Province and 80,000 in Ilam Province. The remaining 510,000 displaced persons are scattered in other parts of the country. The displaced population was accommodated in Government-sponsored camps, settlements and special facilities such as converted hotels.

92. The impact of the displaced population on the services and facilities of host communities has been considerable. For example, the city of Mahshahr has more than doubled its population over the past 10 years owing, in great part, to an influx of displaced people as can be seen from table 6. During this same period other cities in the five border provinces also show high indices of population growth owing to the influx of displaced people. Two examples are Ahwaz with an increase of population of around 75 per cent and Bakhtaran with over 50 per cent. (As a point of reference it should be noted that the population of the country as a whole grew by almost 45 per cent during the same period of time.)

93. The impact of such demographic movements on human settlements has been twofold. On the one hand, in cases where towns and cities were evacuated, the infrastructure, buildings and other facilities rapidly deteriorated for lack of regular maintenance. On the other hand, the influx into rural and urban centres of great numbers of displaced people, in a short period of time, placed an inordinate burden on the social and physical infrastructure of these localities.

94. Table 6 presents population levels for the five border provinces and selected municipalities and cities for the years 1980, 1986 and 1990.

Table 6. Population changes in selected cities, 1980, 1986 and 1990

Place	Population 1980	1986	1990
ISLAMIC REPUBLIC OF IRAN	39 291 000	49 445 010	56 882 000
KHUZESTAN PROVINCE	2 373 000	2 681 978	3 292 447
* Ahwaz (city)	569 708	861 970	989 130
Abadan (municipality)	432 514	0	27 000
Abadan (city)	337 449	0	19 000
Khorramshahr (municipality)	258 907	2 098	73 000
Khorramshahr (city)	166 858	0	6 000
* Mahshahr (city)	102 503	232 642	266 962
* Dasht Azadegan (city)	115 348	75 272	88 000
Bostan (city)	7 900	0	6 000
Susan-Guerd (city)	20 000	22 776	34 000
Howeyzeh (city)	6 900	2 246	12 000
* Dezful (city)	348 034	365 695	419 643
BAKHTARAN PROVINCE	1 186 000	1 462 965	1 683 000
* Bakhtaran (city)	652 898	862 378	989 598
Qasr-e-Shirin (municipality)	62 000	0	8 000
Qasr-e-Shirin (city)	28 000	0	0
Sar-e-Pol-Zahab (municipality)	53 000	0	31 000
Sar-e-Pol-Zahab (city)	25 000	0	6 000
Guilan-e-Gharb (municipality)	24 000	0	65 000
Guilan-e-Gharb (city)	9 000	0	12 000

/...

Table 6 (continued)

Place	Population 1980	1986	1990
ILAM PROVINCE	294 000	382 091	456 000
Mehran (municipality)	53 000	29 716	32 321
Mehran (city)	14 500	0	0
Dehloran (municipality)	61 000	1 988	21 782
Dehloran (city)	10 500	0	3 000
Musiyan (municipality)	5 000	0	0
KORDESTAN PROVINCE	889 500	1 078 415	1 226 000
AZARBAYJAN PROVINCE	1 610 500	1 971 677	2 256 000

Source: Vice-Presidency for Executive Affairs.

Note: The cities marked with an asterisk lie outside the areas that were occupied by Iraq's forces; the rest are within those areas.

95. As an illustration of the devastation of cities and towns in the areas occupied during the war the Government provided the following estimates of destruction:

City	Percentage of destruction
Abadan	60
Khorramshahr	88
Mehran	100
Dasht Azadegan	72
Dehloran	100
Qasr-e-Shirin	100

Source: Vice-Presidency for Executive Affairs.

96. Tables 7 and 8 summarize the destruction in terms of physical units affected. No differentiation is made in terms of surface area destroyed or damaged, but the quantity of construction affected can be appreciated.

97. By any measure the physical damage to the human settlements is staggering. The extent of the damage and destruction in the human settlements sector can be gauged by the fact that new cities, towns and villages will need to be built capable of accommodating 1.24 million displaced persons. The towns will need to be complete with all necessary infrastructure, services and facilities, as well as commercial establishments. Moreover, these settlements will need to be reintegrated as functional elements of larger physical, economic and social entities and of the nation as a whole. This implies, inter alia, reconnecting the settlements to road, electric and telecommunications networks. The sources of economic activity for these settlements will also have to be reactivated, which implies regenerating agricultural lands, industries and facilities, such as ports, to provide gainful employment for the population.

Table 7. Damage incurred by residential units (nationwide)

Province	Number of units	
	Totally destroyed	Damaged
East Azarbayjan	740	3 733
West Azarbayjan	2 100	5 015
Ilam	13 800	26 231
Bakhtaran	38 840	29 140
Tehran	283	1 212
Khuzestan	62 202	82 212
Chaharmahil Bakhhiari	10	90
Esfahan	833	2 757
Zanjan	175	1 351
Fars	58	315
Kordestan	7 205	14 034
Guilan	36	323
Lorestan	2 319	16 998
Central (Province)	574	2 066
Hamadan	1 388	5 000
Bushehr	48	300
Total	130 611	190 777

Table 8. Damage incurred by commercial units (nationwide)

Province	Number of units	
	Totally destroyed	Damaged
East Azarbayjan	76	271
West Azarbayjan	237	630
Ilam	2 010	3 510
Bakhtaran	8 135	2 318
Tehran	147	393
Khuzestan	8 148	14 711
Chaharmahil Bakhhiari	1	4
Esfahan	99	106
Zanjan	42	152
Fars	18	30
Kordestan	1 025	1 812
Guilan	-	-
Lorestan	400	2 800
Central (Province)	48	32
Hamadan	118	130
Bushehr	9	19
Total	20 513	25 918

3. General damage surveyed by the mission

(a) Khorramshahr

Background

98. Khorramshahr is situated in the southern part of Khuzestan Province about 18 kilometres from the city of Abadan. It is located on the north-eastern shore of the Shatt al-Arab, which forms the border with Iraq. The international boundary runs along the central part of the channel of the river, thus the opposite shore is Iraqi territory. Because of the common waterway, the management of the river was shared by the two countries before the outbreak of hostilities.

99. Prior to the start of the war this city had a recorded population of 166,858 inhabitants.

100. The urbanized area of Khorramshahr was characterized by low-rise multiple-storey buildings with a total of around 23,000 housing units in the city. Most of the newer structures, even the one- and two-storey buildings, were of steel frame with infill walls of yellow baked brick and were typically on concrete foundations. Older structures tended to be made of baked brick and some of the structures, particularly on the outskirts, were constructed out of unbaked earth bricks and mud plaster. Storage sheds, industrial plants and other large structures were mainly steel frame covered with corrugated steel.

101. The city had extensive electric, water and sewerage systems. It also had 2 major hospitals, 12 clinics and other health services, 120 mosques and at least 2 major bazaars serving the population of the city. The educational facilities included 2 colleges and about 100 schools.

102. The city was said to have been occupied by Iraq on 28 October 1980 and remained under its direct occupation for a period of about 570 days. Throughout the war the city became the scene of intense battles. At the time of its occupation the majority of the civilian population fled the city and others were reported to have been forcibly removed to Iraq. Today there are a reported 6,000 inhabitants in the city and a total of 73,000 in the municipality as a whole, including refugees from southern Iraq.

Observed level of damage

103. The physical destruction of Khorramshahr is almost complete.

104. It was said that by the time the city was recaptured in 1982, about 8,000 housing units had been completely levelled and another 16 per cent of the housing and public buildings had been damaged beyond repair. These included 2 hospitals, 12 clinics and the great majority of schools, religious and other public institutions.

105. The mission observed that all housing around the Customs area (where Customs employees lived) has been heavily damaged and is beyond rehabilitation. An area contiguous to the port, which had been a commercial and office area serving the port, was observed to have been heavily damaged and possibly beyond any economic rehabilitation.

106. The mission also observed that a considerable number of housing units, on what had been housing estates, had been razed to the ground. Other residential areas were also damaged beyond repair and will need to be cleared before any reconstruction can take place on the same sites. The magnitude of the damage was so excessive that several visits would be required to determine the exact number of dwellings destroyed or damaged. However, it was evident to the mission that a major portion of this city has been demolished and that the remaining structures will require extensive rehabilitation.

107. It is also evident that all public buildings, schools, hospitals, clinics and health centres will either have to be rebuilt or extensively rehabilitated.

108. An old brick palace, next to the port, which had been converted for use as a marine academy, also sustained major damage during the war. This building had architectural merit and was part of the history of the region. Rehabilitation of this building is possible.

109. The water and sewerage system is beyond repair. This was attributable partly to direct hits on the system, partly to collateral damage arising from destruction of nearby targets and partly from lack of maintenance and neglect during the war years.

Reconstruction efforts

110. Since the end of hostilities, a small portion of the population has returned to the city. This population has recently been augmented by an influx of refugees from southern Iraq.

111. The mission was informed that thus far three health centres have been rebuilt, as has a maternity ward. A bazaar has been rehabilitated and the mission witnessed lively activity in this location. The area around this bazaar is quite vibrant and life appears comparatively normal. The mission was also informed that about 10,000 students, ages 6 to 18, have returned to school. It was observed that several housing areas were under construction and that there was housing rehabilitation work in the central part of the city. The mission saw a four-storey privately owned apartment building that was being rehabilitated.

(b) Minu Island (rural area beyond Khorramshahr)

General description

112. Khorramshahr City extends to Minu Island. Agriculture, dates and vegetables, in particular, formed the economic base of the rural part of Minu Island. Prior to the war this island alone had about 1 million date palms.

In 1980 the agricultural activities in this island supported 44 small settlements or villages.

113. Except for a few government buildings such as schools and administrative centres, the rural area was characterized by small unbaked brick houses, generally on stone and cement foundations, with flat wood and earth roofs. There were a few concrete block or baked-brick houses, but these were definitely a small portion of the dwellings. The government buildings were of baked brick and in some cases had steel components for the roof. Aside from the road, electric and irrigation systems there was no other infrastructure in the rural area.

Observed level of damage

114. The impression of the mission is that most of the damage to the housing stock was due primarily to the abandonment of houses for extended periods of time and the consequent lack of maintenance, but there also appeared to be damage caused by hostilities.

Reconstruction efforts

115. Government buildings are being rehabilitated or reconstructed, as are some individual houses. However, the greatest effort is being directed towards revitalizing the date palm plantations and related agricultural activities.

(c) Abadan City

Background

116. Abadan is an oil city that had been planned and developed around one of the major refineries in the country. The city provided a pleasant living environment mostly for the personnel of the oil company and their families.

117. The population of the City of Abadan according to the 1976 census was 294,468; by 1980 it had an estimated 337,449 inhabitants.

118. Those inhabitants not directly supported by employment in the oil company were supported by ancillary services related to the oil industry and its employees. The oil company had two large housing estates, one with approximately 14,000 dwelling units, the other with 4,000. Both of these estates were constructed of baked brick. The design and size of the units was pleasant and ample. The planning of the estates was that of single houses with surrounding landscaped yards.

119. Beyond the oil company's housing estates were other residential areas also of baked brick with some structural elements in steel. Commercial structures and government buildings were mostly steel frame and brick. Most structures were one or two storeys' high with a few buildings being four to five storeys' high.

120. The city had enjoyed water and sewerage service and had a complete electric network. The street layout was largely rectangular with a few landscaped traffic circles and parks. Abadan also had an international airport.

Observed level of damage

121. The city was not occupied but suffered heavy damage from artillery and aerial bombardment, and by 1986 practically all inhabitants had fled the city. Since the cease-fire there has been a slow return. Decay resulting from neglect has added to the destruction caused by the fighting.

122. Throughout the City of Abadan severe damage was evident and all housing estates and other residential areas visited by the mission showed damage from the war, exacerbated by neglect. There will need to be extensive reconstruction and rehabilitation in order to bring these areas back to a habitable state. Since most of the buildings, including some commercial structures and government buildings, were quite substantial, rehabilitation will be rather costly.

123. The mission observed the ruins of 1 hospital and was told that other hospitals and 10 clinics had also been damaged. The mission was shown an abandoned school and a radio/television station that bore signs of damage and vandalism similar to those exhibited in residential and commercial buildings.

124. The mission was told that, because of the silting of the rivers around the island, the level of the water table has changed. This in turn has changed the moisture content in the soil and caused settling of some structures and movements in the ground that have affected the underground utilities. A building used as a cinema that had clear cracks running from the roof to the foundation on two opposite sides was shown to the mission as an example of the effects of hydrological changes on the building stock remaining. The mission was not in a position to verify these assertions during this initial sight survey.

125. The mission was told that 80 per cent of the sewerage system was presently out of service. Government sources attribute a major portion of the breakdowns in the system to the aforementioned hydrological changes, but lack of use and maintenance over a prolonged period of time will also have contributed to the deterioration of the system.

Reconstruction efforts

126. Rehabilitation and reconstruction work in Abadan City, particularly in the southern part of the urban area, was in progress. The mission saw one rehabilitated clinic and was told that another had been rehabilitated and two others were under rehabilitation. Reconstruction plans provide for the installation of a totally new sewerage system.

(d) Abadan Island

General description

127. Apart from the refinery and Abadan City, this island was an agricultural area characterized by small settlements similar to those on Minu Island but considerably larger in area. Fruits and vegetables, rather than dates, were the chief agricultural products. A portion of the population of Abadan Island worked in the refineries located in Abadan City. There were also a number of small industries, notably brick kilns. The settlement pattern was much like that of Minu Island - small villages interconnected by a well-developed secondary road network.

128. As was the case in Minu Island rural housing was mostly constructed of unbaked mud bricks with flat wood and flat earth roofs although there was a higher proportion of baked brick houses.

129. The rural area had a well developed secondary road network, an electrical grid that covered the entire area and an irrigation network.

Observed level of damage

130. The mission could ascertain, from touring the island, that a majority of the houses had been abandoned and that they did not appear to have been lived in for some time. In some cases, they showed signs of deterioration resulting from neglect and, in other cases, war-related damage.

131. The mission saw at least half a dozen abandoned brick kilns, some partially destroyed. It was not clear how much of the damage was due to the hostilities, although some clearly was. It was also not clear if these kilns had been functioning up to the outbreak of the war. The mission was told that these kilns would not be rehabilitated as the brick they produced was not of a high quality.

Reconstruction efforts

132. New plans for the reconstruction and renovation of Abadan Island have recently been completed. These plans envision the introduction of more light industry in the area. Two new major service centres will be built inland, while the pattern of small villages along the coast will be maintained.

133. Reconstruction and revitalization efforts are well under way in the rural areas of Abadan Island. The Government has rehabilitated and expanded an agricultural extension service. Several model villages are being constructed, and the mission saw two of them. The new houses are being built out of baked brick on concrete block foundations with steel beams for the roofs. The design and amenities are those of an urban house. The Government stated that it intended not only to replace what had been lost but to improve the lot of the rural population on this island.

(e) Hamidiyeh-Susan-Guerd-Bostan Rafei-Howeyzeh area

Background

134. This area, which is contiguous to the border between the Islamic Republic of Iran and Iraq, was a highly productive agricultural area. It is characterized by clusters of villages being served by the five larger settlements in the region. Following are general descriptions of the villages and cities, including basic statistics provided by the Government.

135. Hamidiyeh had a population of 15,000 before the war. This town was said to have been 80 per cent destroyed and is now being rebuilt for a population of 25,000. The typical village in this region ranges from 50 (Azadi) to 150 families (Ghodratabad).

136. Susan-Guerd had a population of 20,000 before the war. It was reported to have been 70 per cent destroyed during the hostilities, and changed hands twice. Rehabilitation of villages in the area started around six years ago.

137. Bostan had a population of 7,900 before the war. It now has approximately 6,000 inhabitants but the mission was informed that it is being developed for a population of 35,000. This city also came under heavy attack during the protracted hostilities.

138. No statistics on the pre-war population of the Rafei area were available. However the villages appear to have been quite small.

139. Howeyzeh, according to government sources, had a population of 6,900 before the war. The mission was informed that the town now has a population of 12,000.

140. Traditional construction in the villages of the area was single-storey structures made of unbaked mud brick and flat wood and mud roofs. In the towns and villages construction was mostly of baked bricks with either wood and cement or steel and brick or cement flat roofs. Few buildings were more than two storeys in height.

Observed level of damage

141. Human settlements in the area seem to have suffered considerably from direct military action, including the alleged flooding of vast areas of land for military objectives. Moreover, the repeated campaigns and changes in the front line reportedly resulted in repeated destruction of the same places. Thus, early efforts at reconstruction and rehabilitation met only with further destruction and damage.

142. The mission was not in a position to verify whether Hamidiyeh had in fact been 80 per cent destroyed, but the destruction has indeed been extensive as far as could be ascertained from a visual survey. The same is the case for Susan-Guerd, which was reported to have been 70 per cent destroyed during the hostilities.

143. In the case of Bostan, the town also suffered several periods of destruction during the protracted hostilities. The remains of the old bridge destroyed during the conflict are still visible. Several houses that showed clear signs of two rehabilitation stages were seen by the mission. The two schools seen by the mission in this city had been damaged mostly through looting and vandalism, while the structures remained in good condition. A warehouse belonging to the Construction Crusade that had been built for the first rehabilitation of the city now showed signs of damage.

144. Villages around the Rafei region showed significant damage, mostly from flooding. Most rural construction in this area is of unbaked mud bricks and subject to great deterioration from water. All of these villages are now deserted, although there are some people living in makeshift dwellings in nearby localities. Exceptional damage was suffered by the village of Kavyan, which was completely destroyed by military action. This village was said to have once contained 1,200 houses, but there was little left to verify this assessment.

145. Most of the town of Howeyzeh appeared to have been razed to the ground and a bridge destroyed.

Reconstruction efforts

146. The Government is making major efforts at reconstruction and development of this area. In all the towns and villages visited there was considerable construction of houses, schools and other buildings in progress.

147. The mission was informed that from 130 to 140 villages in the Hamidiyeh area had been rehabilitated. Some villages had to be rehabilitated more than once since the land changed hands several times during the conflict. The same is the case for villages around the Susan-Guerd area, where rehabilitation started around six years ago. A new industrial estate is planned for this city.

148. In Bostan the hospital has been rehabilitated as have 10 of the 17 schools. Along the main street of the city there is a considerable number of new structures.

149. Except for the town of Kavyan, which is being totally replanned and rebuilt, villages around the Rafei region remain abandoned and there are no signs of rehabilitation.

150. In Howeyzeh, the Government has built 15 schools, a 64-bed hospital, a new government office, a park and market place and 1,800 new houses. The new town is planned to be six times larger than the old one.

(f) Ahwaz

Background

151. The city of Ahwaz is the capital city of the Province of Khuzestan and is a major oil centre. It is located about 80 kilometres east of the border, on the Karun river. This city is beyond the area occupied by Iraqi troops during the war.

152. According to government sources, the city of Ahwaz had around 569,708 inhabitants in 1980. In 1990 the population had practically doubled to 989,130. Since the annual population growth of the province has been in the range of 3.7 per cent during the past decade, it is apparent that many of the displaced persons from the war area converged on this cit, for safety.

153. The building types in the city are those characteristic of urban centres in the country: brick masonry housing and other low-rise buildings, which may have some structural steel elements, steel-frame structures up to five and six storeys in height and some reinforced concrete structures. The city has the full range of urban services and infrastructure.

Observed level of damage

154. This city was subjected to aerial bombardment throughout the war years and artillery attacks for a good portion of the same. Vital installations such as bridges, electric power installations and the railway station were often the targets. The mission surveyed an area close to one of the bridges where an apartment building, some offices and shops showed bomb damage. At another site, the mission was told that aerial attacks had demolished or damaged at least half a dozen two-storey residential and commercial buildings. A third site visited by the mission was the residential area around the railway station. Several apartment buildings showed signs of damage by bombs. Finally, damage to the oil company's housing estate (including a school) was surveyed by the mission. These examples were understood by the mission to be typical of the type of damage caused by aerial bombardment of cities beyond the front line. In each case there were evidence of shrapnel left around neighbouring buildings, while the age of the replaced buildings was consistent with the details of the reported incidents.

Reconstruction efforts

155. All sites visited by the mission had long since been cleared of debris and in most cases buildings had either been replaced or rehabilitated.

(g) Dehloran and environs

Background

156. The town of Dehloran is a few kilometres from the Iraqi border along the main highway from Dezful to Ilam. It is in a semi-arid region where the

terrain starts becoming mountainous. For these reasons it is a rather poor agricultural area and there are no other apparent resources. Villages are less numerous here than in the more fertile areas to the south. The mission also visited the town of Musiyan a few kilometres to the south of Dehloran, thereby enabling it to see some of the destruction in the countryside as well as in the village of Musiyan proper.

157. The population of the city of Dehloran, according to the Government, was 10,500 in 1980, while its immediate environs had about 61,000 inhabitants. The economic base of Dehloran was trading and that of the nearby villages agriculture and grazing. The city was completely abandoned for some periods during the hostilities. A few inhabitants have returned over the past five years. It now has about 3,000 inhabitants while the area in general has over 21,000. Musiyan had a population of 5,000 people prior to the war. Today it is desolate, the population having moved mostly to the city of Shush.

158. Dehloran was a town of mostly one-storey baked-brick structures at the centre of town and unbaked brick houses in the outskirts. Government buildings had some steel elements.

Observed level of damage

159. The destruction of human settlements in this area was quite severe. In the case of Dehloran little remains of the original settlement. The destruction was the result of repeated occupations (generally short in duration), artillery shelling from the opposing sides and some aerial bombardment. Dehloran had a water system and the entire region had access to the electricity network, which was reported to have been destroyed several times during the conflict. The mission saw the remains of what had been the local water-treatment plant.

160. Musiyan was totally destroyed. Even substantial structures of reinforced concrete and brick were levelled. A dump for rubble from demolished buildings on the outskirts of what had been the town of Musiyan showed remains of reinforced concrete building components. Baked bricks, tiles and other finishing materials were also evident. The villages in this area were mostly of unbaked mud-brick construction. The mission was told that the town had had an elementary school, high school and clinic, but there was no way of verifying this from the debris and rubble.

161. In the case of the villages the destruction appears to have been the result of battle. One particular example was the village of Nahr Anvar, a settlement of about 70 houses around a water spring on the crest of a mountain. Since this settlement commanded the terrain below, it was turned into a fortification with trenches and other military installations. In the process every building in the village was destroyed. The ruins of one house that was inspected by the mission indicated that the house had been rather substantial and well finished.

162. Other villages visited by the mission were equally demolished. Patak village at one time had over 150 buildings; today the only building standing

is a stone and reinforced concrete structure. It was observed that mixed with the rubble of the buildings were remains of military hardware. The village of Bareh Bijeh was similarly levelled with the exception of a water tower that had served as a watch tower after the town had been destroyed. The mission was also told that there were 110 villages in the region that had been similarly devastated.

Reconstruction efforts

163. The plans for the reconstruction of the Dehloran area have been completed, and work on construction projects is proceeding in the city. Government buildings are close to completion as are a few houses. A handful of shops along one block of the main street have been reconstructed and the street grid is being straightened and widened. In a few villages new baked-brick houses are being built, otherwise the area is still quite desolate.

(h) Mehran and environs

Background

164. The mission was told that before the war the town of Mehran proper had had a population of about 14,500 and that its surrounding area had had a population of over 53,000. The town itself had about 3,100 buildings including about 350 shops.

165. Almost all the construction in the town was of unbaked mud bricks. The town had a water system, electricity and a well laid out street plan. The surrounding villages were built of similar materials.

Observed level of damage

166. The mission observed that the destruction of Mehran was total. The town, as well as its environs, are deserted. The same was the case in one of the neighbouring villages visited by the mission. The entire village was laid waste, with only the remains of the school to be seen among the piles of rubble. The site of the village of Islamiyeh was visited on the way to Mehran from Dehloran. This small village was turned into a military camp and changed hands several times during the war. Nothing of the village remains.

Reconstruction efforts

167. Reconstruction plans for Mehran are reportedly almost finalized and clearing work has started.

(i) Ilam

Description of the city prior to the war

168. This city is the capital of the province by the same name. It is located in the mountains and beyond the area occupied by Iraqi troops during the war.

It is smaller and less prosperous than Ahwaz, but otherwise has similar types of buildings utilizing the same materials and building technology. The city has all the basic urban services.

Observed level of damage

169. The mission was told that the city had been subjected to aerial bombardment during the war. As in other cities in the war-affected areas, damaged sites have been cleared and new buildings have been put up in place of the demolished ones. Although apparently hit by bombs, the main hospital building has been repaired. The city has several small refugee camps, of which the mission visited one (Shahid Keshvari).

(j) Guilan-e-Gharb

Background

170. This is a city of ancient origins situated in a valley about 30 kilometres from the border with Iraq. The city is an agricultural centre, and before the start of the conflict the population was approximately 9,000 inhabitants.

171. Prior to the war the materials and construction techniques prevalent in Guilan-e-Gharb showed a transition from unbaked mud-brick construction to baked brick. The urban pattern was also similar to that of other small cities. One- and two-storey structures made up almost the totality of buildings with high density in the centre, dropping considerably towards the outskirts. The city was served with water, electricity and sewerage.

Observed level of damage

172. The city was occupied at the beginning of the conflict and again towards the end. For most of the war the settlement was abandoned. The population started returning a little over two years ago. The mission observed that damage to housing and other buildings was extensive; however, roughly a third could be rehabilitated.

173. The mission inspected the remains of the hospital. The entire building had been vandalized and all removable fixtures, including windowframes and doors, removed. All that remained of the laboratories and X-ray buildings were some crumbling walls; even the roof had been removed. The mission was also shown an empty lot where the maternity ward had once stood. There were signs of shrapnel on the buildings in the vicinity of the hospital.

Reconstruction efforts

174. The city is quite vibrant owing to the quantity of construction and rehabilitation taking place. The mission was informed that two primary and two secondary schools had already been built and were operational and the observed extent of reconstruction of private housing was high.

175. Today the city has about 12,000 inhabitants, a portion of them being construction workers involved in the reconstruction and rehabilitation work.

(k) Sumar and Naftshahr

Background

176. These were two small towns along the border with Iraq, Sumar, with a pre-war population of 7,000, was the centre for a few small agricultural villages, while Naftshahr was an oil town. The oilfield straddles the border and was being jointly exploited by the two countries prior to the start of hostilities.

177. The typical construction in Sumar and the surrounding villages had been unbaked-brick structures with flat wood beam and mud roofs. Naftshahr had a number of these types of structures, but there was also a good percentage of reinforced concrete and baked-brick buildings with some steel elements, particularly in the central part of the town.

Observed level of damage

178. Because of the danger posed by the extensive minefields in the area, the mission surveyed the area by helicopter.

179. In Sumar not one building was standing and the town was seen to be totally deserted, although the mission noticed some small villages in the area that showed little damage and appeared to be inhabited. The destruction at Naftshahr appeared to be total; all the oil installations, including storage tanks, together with the town's buildings had been destroyed.

Reconstruction efforts

180. The mission was not informed of any reconstruction efforts under way in this area.

(l) Qasr-e-Shirin

Background

181. The mission was told that prior to the war this city had been a thriving community attractive to tourists in part because it was the crossing point to Iraq and in part because of the legend of Khosrow and Shirin. The city is located 2 kilometres from the Iraq border. The mission was informed that the population had been evacuated from the area before its occupation by Iraqi forces.

182. Prior to the war, the city itself had a population of 28,000, with 12,000 dwelling units, while the municipal area had 62,000 inhabitants.

183. The economic base of this community was a mix of agriculture (citrus and dates), commerce and tourism (as an important border crossing) and some small industries.

Observed level of damage

184. Except for the main part of the mosque and the damaged remains of an ancient building, little remains of this city either above or below ground.

185. Today the city is empty except for a few construction workers involved in the cleaning-up operation. Although the entire city has been levelled, the mission could detect from the foundations and remains of some structures that the city had consisted largely of two- and three-storey-high buildings. The predominant construction materials were steel, baked bricks, some reinforced concrete and, towards the outskirts, unbaked brick.

186. The city had possessed water, sewerage and electricity networks; all were observed to be destroyed beyond repair. The destruction of these systems can be attributed to two factors: (a) as collateral damage from the destruction of houses; and (b) the movement of heavy equipment and vehicles in the streets.

Reconstruction efforts

187. At the present time the authorities are involved in cleaning up the debris from the city. It was reported that many areas will simply be covered over with earth and a new city will be built on the original site.

(m) Sar-e-Pol-Zahab

Background

188. This city is about 30 kilometres east of Qasr-e-Shirin. It was said to have been shelled by enemy forces from the surrounding mountains and attacked from the air. During the conflict it was occupied briefly by enemy armoured units.

189. The mission was informed that the pre-war population of the city had been 25,000 and that of the municipal area 53,000 inhabitants.

190. The materials and construction techniques prevalent in Sar-e-Pol-Zahab and the urban pattern are much the same as those in other small cities described above.

Observed level of damage

191. The mission found that the city has been extensively destroyed although there were many structures that could be rehabilitated and the infrastructure was partially functioning.

Reconstruction efforts

192. Today, the city has 6,000 inhabitants and the municipal area 31,000. The city is quite vibrant and there is much construction activity in both the private and the pubic sectors.

4. Reconstruction priorities and efforts

193. Reconstruction efforts were begun two years after the start of hostilities. Thus, reconstruction ran parallel with the war effort for a period of about six years.

194. The priorities set by Government for this task were clearly stated from the outset and remain valid today. They are:

(a) Reconstruction of residential and commercial units;

(b) Creation of productive employment for the people in agriculture and small industries;

(c) Provision of fuel, water, sanitation, electricity, roads and telecommunications facilities;

(d) Reconstruction of factories that produce building materials;

(e) Reconstruction of historical monuments and the preservation of certain symbols of war.

195. Because of the scale of the destruction incurred, the Government has sought the active participation of the entire nation in the reconstruction process. People and organizations from all parts of the country are participating in the process.

196. One of the mechanisms that helps to integrate popular participation with the government structure set up for reconstruction is the "External Cooperating Implementers". Under this arrangement the reconstruction of rural districts (each containing a number of towns and about 50 to 200 villages) is entrusted to provinces that were not directly stricken by the war. Operational quarters have been established in the war-affected zones with supporting offices in the home provinces. The supporting provinces provide the required human resources and skills, gather donations and financial support and provide the required tools and machinery and even construction materials within their capabilities.

197. The External Cooperating Implementers have authority and freedom in terms of assessing needs, planning and implementing their work, referring to the Government's provincial headquarters or the main headquarters for reconstruction in Tehran in cases of financial or technical shortfalls.

198. All institutions involved in the national reconstruction and rehabilitation process are coordinated by the Vice-President for Executive Affairs, who has overall responsibility for the reconstruction programme. As far as reconstruction and rehabilitation projects are concerned the lead institutions are the Ministry of Interior, which is responsible for urban affairs, and the Ministry of Housing and Urban Planning, which is responsible for macro-level policy at the national level. Under the direction of this Ministry the following institutions are also involved in different aspects of the reconstruction efforts: the Urban Land Organization, which is concerned with allocation and use of land in urban areas; the Building and Housing Research Centre, which is involved in research in the fields of construction and housing; and the Centre for Urban Planning and Architectural Studies, which does research in urban development and architectural issues.

199. Associated with the Ministry of Housing and Urban Planning is the semi-autonomous Housing Foundation that is responsible for policy and development of rural housing and urban low-income housing. Finally, there is the Ministry of Jihad Sazandegi (Construction Crusade) which is concerned with the improvement of the economic situation in rural areas, the construction of infrastructure and, to some extent, public buildings in rural areas.

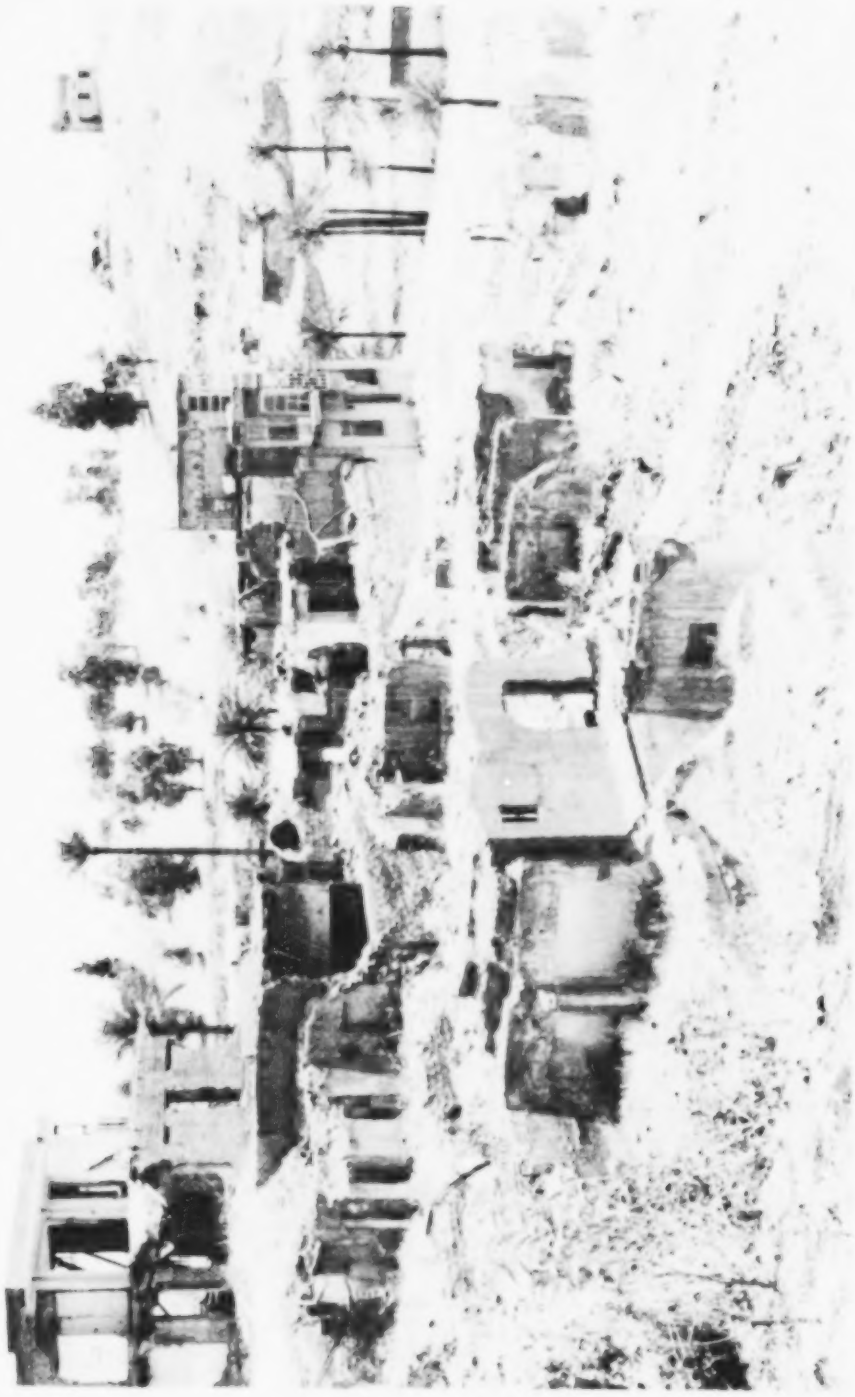
200. Tables 9 and 10 contain a summary of reconstruction and rehabilitation of housing and commercial buildings.

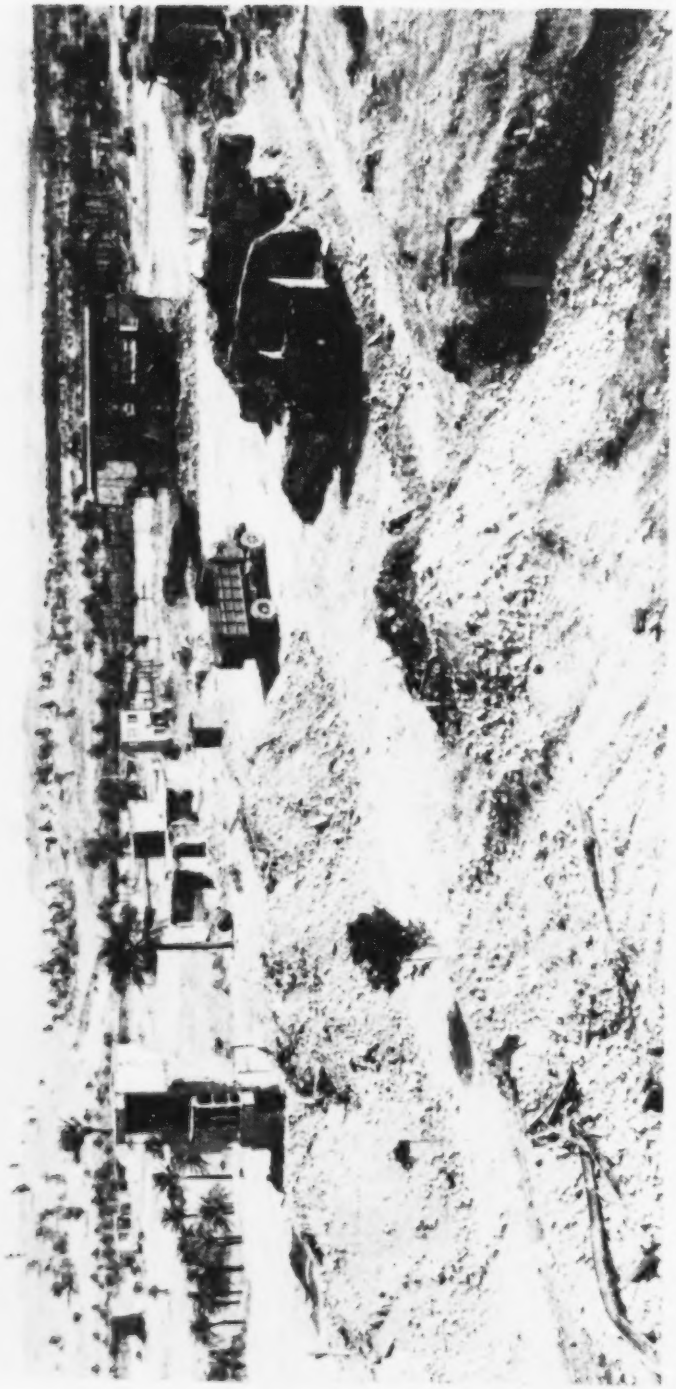
Table 9. Reconstruction status: residential units

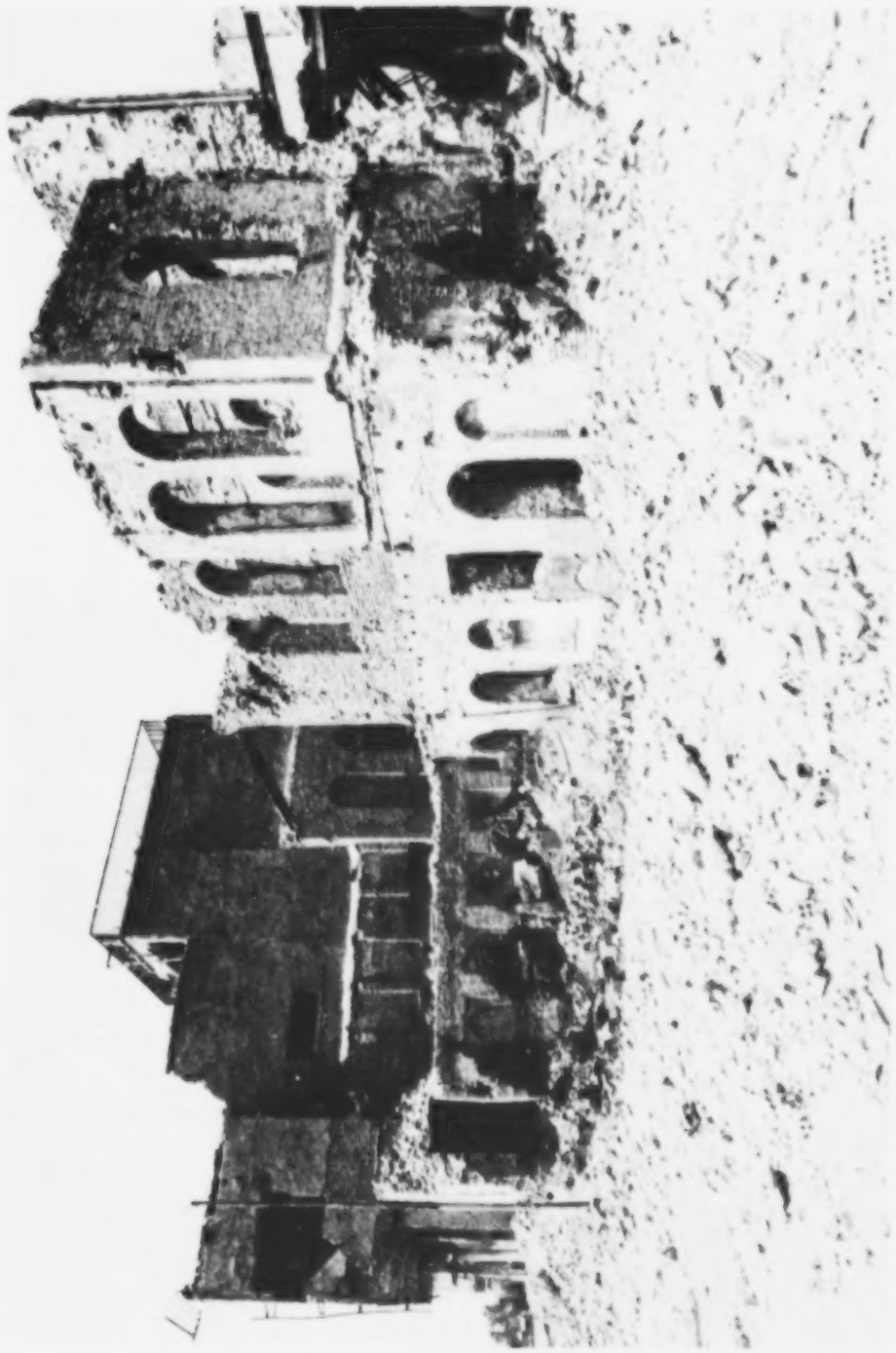
Province	Completed		Still under construction	
	Totally destroyed	Damaged	Totally destroyed	Damaged
East Azarbayjan	740	3 733	-	-
West Azarbayjan	1 800	4 964	300	51
Ilam	8 679	26 231	5 121	-
Bakhtaran	12 520	29 000	26 320	140
Tehran	283	1 212	-	-
Khuzestan	11 600	51 352	50 602	30 860
Chaharmahil Bakhhiari	10	90	-	-
Esfahan	833	2 757	-	-
Zanjan	175	1 351	-	-
Fars	58	315	-	-
Kordestan	3 005	12 934	4 200	1 100
Guilan	36	323	-	-
Lorestan	2 319	16 998	-	-
Central (Province)	574	2 066	-	-
Hamadan	1 388	5 000	-	-
Bushehr	48	300	-	-
Total	44 068	158 626	86 543	32 151

Table 10. Reconstruction status - commercial units

Province	Completed		Still under construction	
	Totally destroyed	Damaged	Totally destroyed	Damaged
East Azarbayjan	76	271	-	-
West Azarbayjan	180	600	57	30
Ilam	1 260	3 510	750	-
Bakhtaran	3 635	2 318	4 500	-
Tehran	147	393	-	-
Khuzestan	1 648	6 308	6 500	8 403
Chaharmahil Bakhhiari	1	4	-	-
Esfahan	99	106	-	-
Zanjan	42	152	-	-
Fars	18	30	-	-
Kordestan	850	1 812	175	-
Guilan	-	-	-	-
Lorestan	400	2 800	-	-
Central (Province)	48	32	-	-
Hamadan	118	130	-	-
Bushehr	9	19	-	-
Total	8 531	18 485	11 982	8 433







B. Oil, gas and petrochemicals

1. Background

201. Given the importance of the oil sector in the Iranian economy and its major share in national economic activities falling outside the sphere of strict production, the Government has accorded the sector the highest priority for the reconstruction of damaged installations and a category separate from those of industry and mining. This category covers both crude oil and petroleum products, as well as all ancillary and related activities such as transportation.

Direct damage

202. The Government's final report on estimates of damage arising from the war states that direct losses to the oil sector during the war years amounted to Rls 7,382,625 million, or roughly 24 per cent of the total damage to the national economy (Rls 30,811,423 million).

203. The following tables show the breakdown of direct damage to the oil sector in percentages and millions of rials:

	Percentage	Millions of rials
Buildings and installations	92.14	6 802 044
Machinery and equipment	3.40	250 786
Materials and goods	4.47	329 795

The breakdown by subsector is as follows, in percentages and millions of rials:

	Percentage	Millions of rials
Crude oil	8.19	604 677
Petroleum products	91.81	6 777 948

Map 4

MAP NO. 3642.13 UNITED NATIONS
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Indirect damage

204. The Government's report also provided estimates of indirect damage to the oil sector at Rls 13,416,915 million. This figure covers loss of profit from discovery, drilling, extraction and production, as well as loss of income and revenue from the refining, production and sale of petroleum products.

2. Observed level of damage

(a) General

205. The information contained in this section is based on discussions with representatives of the Iranian Government and with technicians at the facilities visited. It also includes observations made by the mission on war damage and on reconstruction efforts.

206. The inspection schedule involved extensive travel throughout the major oil-producing areas of the Islamic Republic of Iran by car, aeroplane and helicopter. Visits were made to three refineries, four petrochemical plants, Kharg Island and several other terminals, as well as most of the offshore drilling zones. The mission observed the severity and magnitude of the damage inflicted on the industry - and the effort being made by the Iranian authorities in reconstructing the damaged facilities and in utilizing to the utmost whatever materials were available locally.

207. Certain trade embargoes and related restrictions to normal supply of goods and services have presented serious difficulties in proceeding with reconstruction in a timely fashion. Replacement and repair of the heavy machinery damaged during the war meant experiencing extraordinarily long delivery times and very few world sources from which to obtain the equipment required.

208. The mission noted that considerable improvization was necessary to repair damaged parts. While many of the reconstructed facilities have resumed operations, the temporary parts will need to be replaced in time with more permanent ones. Moreover, much of the facilities' instrumentation has become outdated and will need to be replaced with updated technology.

209. In many areas safety has been compromised in order to restore operations. This is especially true in the offshore drilling and shipping areas. This aspect was discussed with technicians on the spot, and assurances were given to the effect that this was receiving urgent attention.

210. The government and industry records are for the most part in Farsi. Since no translator was attached to the mission, translation was slow and difficult. Although some translated material was eventually supplied, the mission was unable to spend significant time analysing data. Other than certain summary data for Abadan refinery, very few reconstruction data were available during the visit. The mission therefore concentrated on a thorough

inspection of the major facilities affected by the war and on obtaining an overview of the degree of reconstruction that had taken place.

(b) Oil refineries

Tehran Refinery

211. This plant, which is located about 15 kilometres south of the city, was inspected by the mission. Tehran Refinery is one of seven in the country and critical in supplying the populous Tehran area as well as areas to the east and north-west. Before the war the plant processed 190,000 barrels per day (b.p.d) of crude oil, and produced liquefied petroleum gas (LPG), asphalt, lubricating oils, motor gasoline, jet fuel, diesel and heavy fuel.

212. The refinery has two complete process trains, one about 25 years old with a capacity of 110,000 b.p.d., the other about seven years old and 120,000 b.p.d., recently debottlenecked from 80,000. Each train has an atmospheric and vacuum distillation unit, a viscbreaker, a platforming section, an Isomax unit and LPG production facilities. There is a single asphalt oxidation unit for making both paving cement and a limited number of industrial asphalts. There is a single amine and sulphur recovery section.

213. Each of two boilers generates 350,000 pounds of steam per hour. Power generators produce the plant's electrical needs. Cooling water circulation is 45,000 gallons per minute and there are 2 cooling towers, an original wooden one and a new cement one built after the original was totally destroyed in the first air attack. Each of the two process trains has its own control room. The trains are set well apart and the units within them generously spaced.

214. At the refinery the mission was informed that during the war two separate air attacks were made on the complex. In the first attack the major strikes were on the No. 2 primary distillation section, the No. 1 utility fuel tankage and the cooling tower areas. The No. 2 primary distillation furnace was heavily damaged and the reboiler furnace in the same unit was completely destroyed. One of the two cooling towers was also completely destroyed. In a second attack a year later, the major damage was to the main unit pipe runs and instrumentation piping in the No. 2 section and two 100,000 barrel tanks in the same general area were completely destroyed. The tanks contained intermediate lubricating oil stock and suffered direct strikes.

215. Following the first attack the refinery crude processing capability was reduced from 190,000 to about 100,000 b.p.d. for the 10 weeks it took to repair the damage to the No. 2 primary distillation section. The cooling tower was replaced by a new concrete structure. In the second attack the loss of throughput in the No. 2 area lasted about a month and supply was sustained from inventory. Damage to piping and instrumentation was extensive but, with temporary connections, throughput loss was minimized.

216. The mission was shown through the plant and observed some residual signs of damage and considerable reconstruction. The refinery is now operating normally at 230,000 b.p.d.

Abadan Refinery

217. The refinery, which prior to the war was the largest in the world, processed 640,000 b.p.d. in 1979. Along with the product yield tankage the refinery covers a 16-square-kilometre area. Although the refinery area never fell into the hands of the Iraqi forces, both the process and tankage sectors came under repeated attack and suffered damage to their major components ranging from moderate to heavy.

218. Attacks on the refinery began very early in the war to the extent that, before the end of 1980, operations had to be terminated. The refinery remained shut down for over eight years. By 1989 reconstruction of one of the primary units was completed and a simple skimming operation began. By 1990 one of the reforming units was repaired and brought into operation. In the year ending March 1991, an average 138,000 b.p.d. were being processed by the reconstructed facilities.

219. The mission was shown around the entire plant and observed the areas hardest hit and the limited reconstruction to date.

220. Operations today are restricted to two of the original five primary distillation units, only one of five vacuum units, a reforming facility and the lubricating oil processes. In addition there are certain other fractionation units functioning as well as a few treating units. Units not yet functioning include the other three primary and four vacuum fractionation units, a catalytic cracking unit, a thermal reforming facility, two alkylation units, two isomerization units and all of the sulphur recovery and acid plants. Many of the secondary fractionation and treating facilities also remain inoperable.

221. In general, present reconstruction work is aimed at bringing additional crude fractionation capacity on stream which, according to government sources, will come about later this year. The plant is currently processing 190,000 b.p.d. in a skimming mode. It expects to stream another 200,000 b.p.d. in a similar mode within the year. With the exception of one of the reforming units, none of the critical secondary processes is even close to operation. This means a continuation of the marginally economic skimming operation for some years to come.

222. It will be many years before Abadan Refinery is totally reconstructed with integration of all the secondary processes. Only then will the plant be economically producing a full quota of much needed gasoline and distillate. Until then the Islamic Republic of Iran will continue to require substantial imports of finished product at a high penalty cost. This emphasizes the need to reconstruct the cracking units and other secondary facilities on a priority basis.

223. The Government has estimated the production loss from this refinery alone at over 700 million barrels over the eight-year period with a value of about $27 billion.

Other refineries

224. Time constraints did not permit the mission to visit the other refineries at Esfahan, Tabriz, Shiraz and Bakhtaran.

225. However, the authorities reported that the attacks on Esfahan Refinery were similar in nature and severity to those on Tehran and had taken place in the same time-frame. The targets appeared to be specific critical equipment. The interruptions in capacity were also similar to Tehran, relatively minor in nature. The plant has, over the past three years, been debottlenecked to a crude capacity of about 280,000 b.p.d. The Tabriz plant was said to have been bombed repeatedly during the war. It was pieced back together many times and the Government advises that it is presently operating at its pre-war capacity of 80,000 b.p.d.. Shiraz Refinery was attacked from the air on two occasions with significant damage but only minor disruption in production. Bakhtaran Refinery was very severely damaged in many attacks but is now operating at its pre-war level.

Comparative production outputs

226. The throughput of the seven Iranian refineries over the period of the war years is shown below.

Table 11. Throughput of refineries, 1980-1990

Refinery	1980	1982	1984	1986	1988	1990
Esfahan	200 000	280 000	221 000	240 000	258 000	270 000
Tehran	190 000	205 000	265 000	207 000	230 000	226 000
Abadan	640 000					138 000
Tabriz	80 000	72 000	83 000	89 000	69 000	89 000
Shiraz	40 000	44 000	39 000	33 000	34 000	34 000
Lavan	20 000	17 000	17 000	18 000	22 000	23 000
Bakhtaran	20 000		22 000	13 000	19 000	27 000
Total	1 190 000	618 000	647 000	595 000	632 000	807 000

227. The above tabulation illustrates the loss of production capability resulting from attacks on the refineries. This information was supplied to the mission by the Oil Ministry. The Islamic Republic of Iran is today having to import 50,000 to 100,000 b.p.d. of finished petroleum products. During the war imports reached as high as 400,000 b.p.d. Prior to the war the country was completely self-sufficient in its ability to meet its own petroleum product needs.

(c) Oil- and gas-producing areas

228. The mission visited a series of crude-oil-pumping and booster stations, gas plants and associated facilities located to the east and south-east of Ahwaz.

229. Following is a listing of the specific sites visited.

1. Ahwaz production station No. 1
2. Ahwaz production station No. 2
3. Ahwaz gas compression station No. 1
4. Ahwaz gas compression station No. 2
5. Ahwaz crude-oil-booster station
6. Aghajari crude-oil-booster station No. 1
7. Aghajari crude-oil-booster station No. 2
8. Aghajari production station No. 2
9. Aghajari desalting plant No. 2
10. Aghajari gas compression station No. 2
11. Aghajari gas compression station No. 500
12. Bid Boland natural gas liquids (NGL) fractionation plant

230. The installations are part of the gathering systems for crude oil, raw natural gas and the handling of the natural gas liquids that are indigenous to both oil and gas. They represent vital revenue generation for the national economy. The facilities are spread over a wide area starting just north-east of Ahwaz and ranging in a south-easterly direction towards a point opposite Kharg Island. All came under repeated air attack during the war. In many cases the attacks seem to have been directed against specific key components of the installation, resulting in maximum disruption. The facilities were sometimes struck just as repairs on them were being completed.

231. Currently, the operations are below standard and not cost-effective owing to a lack of critical pieces of equipment. Although the key commodity, crude oil, is flowing and generating sales revenue, it is doing so at a very high cost. Enormous quantities of gas and NGL burn wastefully and continuously. Recovery of the NGL and gas requires replacement of compressors and other pieces of large machinery that were damaged or destroyed during the war. Such machinery is not easily available and orders take considerable time to fulfil.

232. The downstream facilities, such as the fractionating plant at Bandar Mah-Shahr, are capable of handling additional material whenever it can be made available from the field.

Bandar Mah-Shahr NGL fractionation plant

233. This plant uses as raw material accumulated natural gas liquids from the crude-oil-gathering systems. The plant separates the bulk into component parts (natural gas, propane, butane and light naphtha), each of which then goes to a sweetening process for sulphur removal, purification and finally storage for domestic sale or export.

234. Plant capacity was 50,000 b.p.d. in 1980 and has, since the war, been debottlenecked to 79,000 b.p.d. The mission was informed that this plant was attacked several times in the later years of the war. Considerable damage was observed to have been inflicted on critical pieces of equipment.

235. The authorities advised the mission that the actual throughput is only 25,000 b.p.d. for want of feedstock resulting from damaged gathering facilities upstream in the oil fields.

Dehloran, Dezful and Ilam regions (north of Ahwaz)

236. The mission visited the Nazamia, Sabzab and Tang Fani pumping stations in the area about 100 kilometres north of Ahwaz. All were subjected to air attacks during the war. The damage caused the closure of critical equipment such as compressors and pumps. Control centres were also heavily damaged. At Tang Fani the main pipeline was severed. In all cases the facilities have been reconstructed and the supply of oil and product returned to normal. As with other damaged installations, some of the instrumentation and building repairs may have to be rebuilt at a later date.

237. The mission also flew over two installations that had been heavily damaged. These installations, near Dehloran and Cheshmeh Khosh, were destroyed and are now shut down. The mission also observed from the air a well site near Ilam that had been destroyed and the well cemented in.

(d) Petrochemicals

Razi Petrochemical Complex (near Bandar-e-Emam-Khomeyni)

238. The mission inspected this plant, which is of 1967 vintage. It had been expanded many times over the years. The plant processes NGL feedstock from the oilfields for the production of sulphuric acid, phosphoric acid, fertilizers, ammonia, urea and DAP, a plasticizer.

239. The plant was subjected to several air attacks during the war years, the last occurring immediately before the cease-fire came into effect. Attack targets were generally specific critical equipment items such as control centres, heavy machinery and tankage.

240. The mission was shown around the plant and was able to see many parts which had been damaged and repaired. The plant has been gradually reconstructed since the cease-fire and was reported to be close to original capacity level in most sections. Some sections of the plant, however, still need a considerable amount of work of a more permanent nature, notably in the tankage and instrumentation areas.

Bandar-e-Emam-Khomeyni Petrochemical Company

241. The war interrupted the completion of this large petrochemical facility. The facility was about 60 per cent completed when the war broke out. At that time it was a Japanese/Iranian joint venture. The facility is designed to process propylene as a raw material, and includes ethylene, polyethylene and polystyrene production units among many others. The plant covers an area of over 2 square kilometres. It was attacked many times and critical components were destroyed. In 1988, after the cease-fire, Japan decided to withdraw from the venture. The Islamic Republic of Iran is proceeding to complete the reconstruction of the facilities one stage at a time. By the time the plant begins operations, 12 or 13 years will have elapsed from the original design. The possibility of obsolete technology could therefore become a matter of some concern.

Farabi Petrochemical Company (near Bandar-e-Emam-Khomeyni)

242. The plant was inspected by the mission. It is a specialty chemical plant which produces 40,000 tons per year of plasticizer and 5,500 tons per year of phthalic anhydride for the paint industry. The feedstocks are orthoxylene and 2-ethyl benzene.

243. It was subjected to two major air attacks. Several charge and product tanks were destroyed. A control centre and several large pieces of machinery were heavily damaged. Reconstruction began in 1989 and, at the time of the mission's visit, was 50 per cent completed.

Abadan Petrochemical Company

244. The mission visited the petrochemical plant adjacent to the Abadan Refinery. The plant starts with propylene as a feedstock and cracks it to ethylene. From ethylene is made PVC, detergent, paint ingredients, acids and other upgraded materials. The plant was built in 1968, and when the war broke out it was converting 5 million standard cubic feet per day of propylene and producing 60,000 tons of PVC.

245. Much of the plant was destroyed by the war and the entire operation was shut down. The mission observed that it has now been rebuilt and is operating at close to pre-war capacity. Parts of the reconstruction are temporary and will need to be replaced by some permanent components.

(e) Loading ports

Kharg Island

246. The mission visited this island, which lies about 20 miles off shore. It is 6 kilometres long and 4 kilometres wide at the widest point with an area of about 22 square kilometres. In 1980 it was the world's largest loading port, modern and efficient in every respect. An outstanding feature of this complex was a huge tank farm containing many 1 million barrel and 500,000 barrel tanks, with a combined capacity of 22 million barrels. The island also includes a crude processing plant for offshore oil from several nearby drilling operations.

247. The loading facilities themselves are divided. On the east is the 2-kilometre-long T-jetty, which before the war could load up to ten 250,000 dead-weight-tons (DWT) ships simultaneously with a total loading rate of up to 65,000 tons per hour. To the west of the island is the loading facility known as Sea Island. It is several hundred yards offshore and before the war could load up to four of the world's largest oil tankers simultaneously, i.e. 500,000 DWT ships with 35 metre draft.

248. During the war the island and its facilities were subjected to repeated air attacks with devastating results. Many of the huge storage tanks were destroyed; about 75 per cent of the tankage was either totally destroyed or badly damaged. The famous T-jetty and Sea Island facilities were hardest hit. In several instances ships at the jetties were bombed.

249. A remarkable effort has been made to reconstruct the facilities. Work is in progress everywhere but it will take years to restore Kharg Island to its pre-war condition and capability.

250. Even after a monumental reconstruction effort the T-jetty can handle only four ships using facilities that can best be described as makeshift and hazardous. Although it is reported that much of the underwater structural material remains secure, the facility will have to be completely rebuilt at

least above the water, one section at a time. This will take many years while retaining the ability to load ships in some fashion.

251. Sea Island faces similar reconstruction problems and can today handle only two ships, with temporary facilities. Both jetties were heavily damaged, some sections were totally destroyed.

252. The extensive housing complex on the island was also attacked with devastating consequences. Five hundred homes were either destroyed or badly damaged. Reconstruction in this area is well under way and reported to be about 60 per cent complete.

Ramhormoz Terminal (near Bandar Mah-Shahr)

253. The mission inspected this terminal, which is the main outlet for production from Abadan Refinery. The products are pumped through a manifold of pipelines from Abadan east to Ramhormoz, a distance of some 150 kilometres. The terminal has about 2 million barrels of storage connected to six jetties that service tankers of up to about 20,000 tons, limited by draft of about 35 feet. Before the war the terminal could load up to 10 ships per day. The flows from Abadan and to the ships were controlled from a huge master control room. The terminal handled LPG, motor gasoline, jet fuel, diesel and heavy fuel oil.

254. The mission observed widespread damage from air attack. The control centre, which was totally destroyed, has now been partially rebuilt but to date only operates manually. The mission observed much damage to tankage and was informed that about 40 per cent of the tankage had been destroyed or damaged. However with Abadan operating at only at 40 per cent of its normal capacity, rebuilding has, for the moment, a low priority.

(f) Offshore drilling and production

255. Over 60 per cent of the offshore drilling and production platforms came under air attack during the war. The platforms were subjected to massive destruction and today production is only about 30 per cent of its pre-war level even after considerable reconstruction. The mission inspected the following rigs and platforms by helicopter.

Abouzar

256. The Abouzar field is about 45 kilometres from Kharg. The potential of this field is reported to be approximately 250,000 b.p.d. Repeated air attacks during the war shut down the facility. The attacks were centred on the production platform and the first stage separation plant on board which virtually negated any production. Some reconstruction has taken place, much of it of a temporary nature. Oil production has been restored to approximately 50,000 b.p.d.

257. Attacks were also made on the Nowruz field close by. No reconstruction has yet been undertaken and the wells have been cemented in.

Siri Island

258. The mission flew to Siri Island to inspect its oil installations. Siri Island is situated in the middle of the Persian Gulf about 200 kilometres west of the Strait of Hormuz. The mission was shown the crude-oil-gathering station that handles production from the Nasr and Siri offshore drilling platforms. At the outbreak of the war the two platforms were producing at 40,000 b.p.d., although they are said to have a 100,000 b.p.d. potential. The island also has a regular loading jetty capable of handling 250,000 DWT ships.

259. During the war, the Iranians moored two supertankers (500,000 DWT each) at Siri to load international shipping which refused to go to Kharg for fear of attack. Several large ships were then chartered to transport crude from Kharg to fill the ships at Siri. In this way the Islamic Republic of Iran maintained continuity of oil supply operations from about 1984 to 1986. Subsequently, air attacks on Siri which, inter alia, resulted in the destruction of ships and tankage, forced the operation east to the Hormuz area, where it continued until the end of hostilities.

260. At the onset of hostilities, the Nasr drilling zone included 7 separate drilling platforms with over 60 drillstems. All were connected to a central production platform where a primary separation of the crude oil took place. The crude oil was then piped to a final separation plant on Siri Island.

261. Towards the end of the war many of the Nasr zone drilling platforms were attacked, causing extensive damage that stopped production for about a year. Destruction at the central offshore production platform necessitated moving the entire separation operation to the island plant.

262. The mission observed the extensive damage on the production platform and on several of the drilling platforms and was informed that, to date, production has been restored only to the 25,000 b.p.d. level.

Lavan Island

263. The mission travelled to Lavan Island, a fairly large island just off the Iranian coast about 300 kilometres due west of Hormuz. It is a gathering point for offshore oil from both the Salman and Rashalat offshore drilling activity zones. Each of the two zones contains many drilling platforms, all connected to a centrally located production platform.

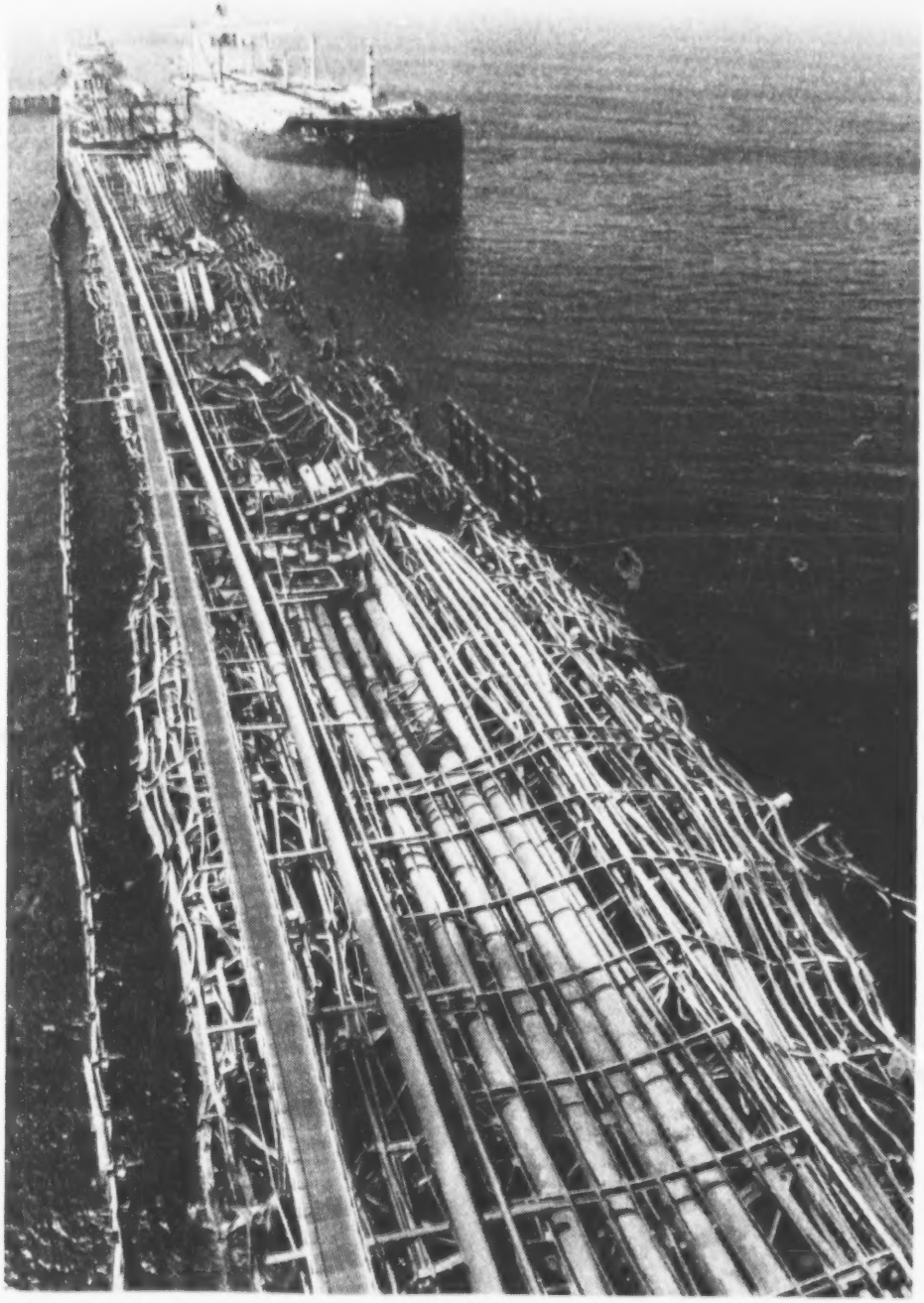
264. Lavan Island itself was attacked towards the end of the war with much damage to tankage and the jetty, which had been able to accommodate medium-sized tankers. The island has two separation plants, one for each of the Salman and Rashalat offshore production units, where the crude oil is

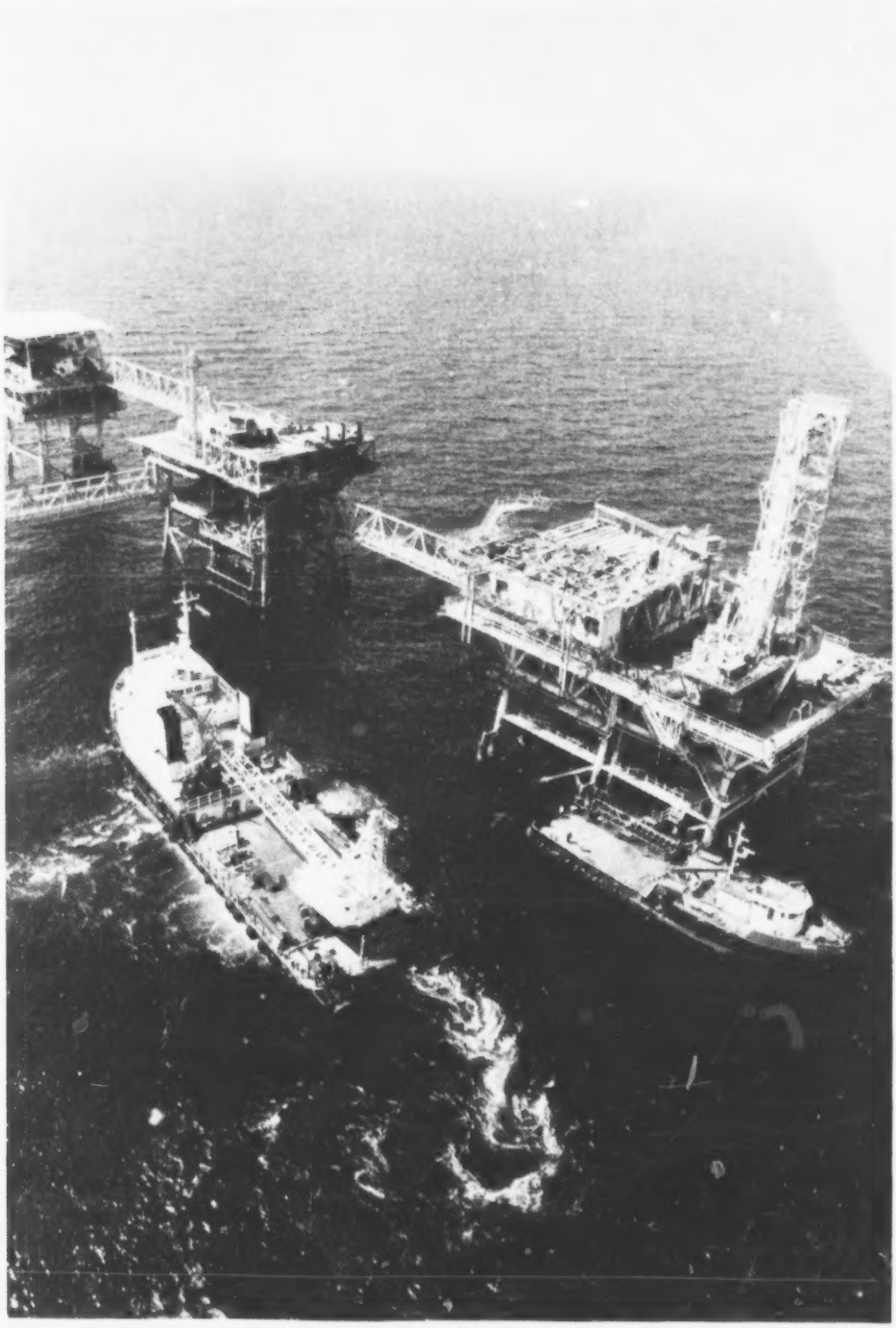
prepared for final export. Both sustained damage from air attack, particularly the treatment units, and to date have only been partially reconstructed.

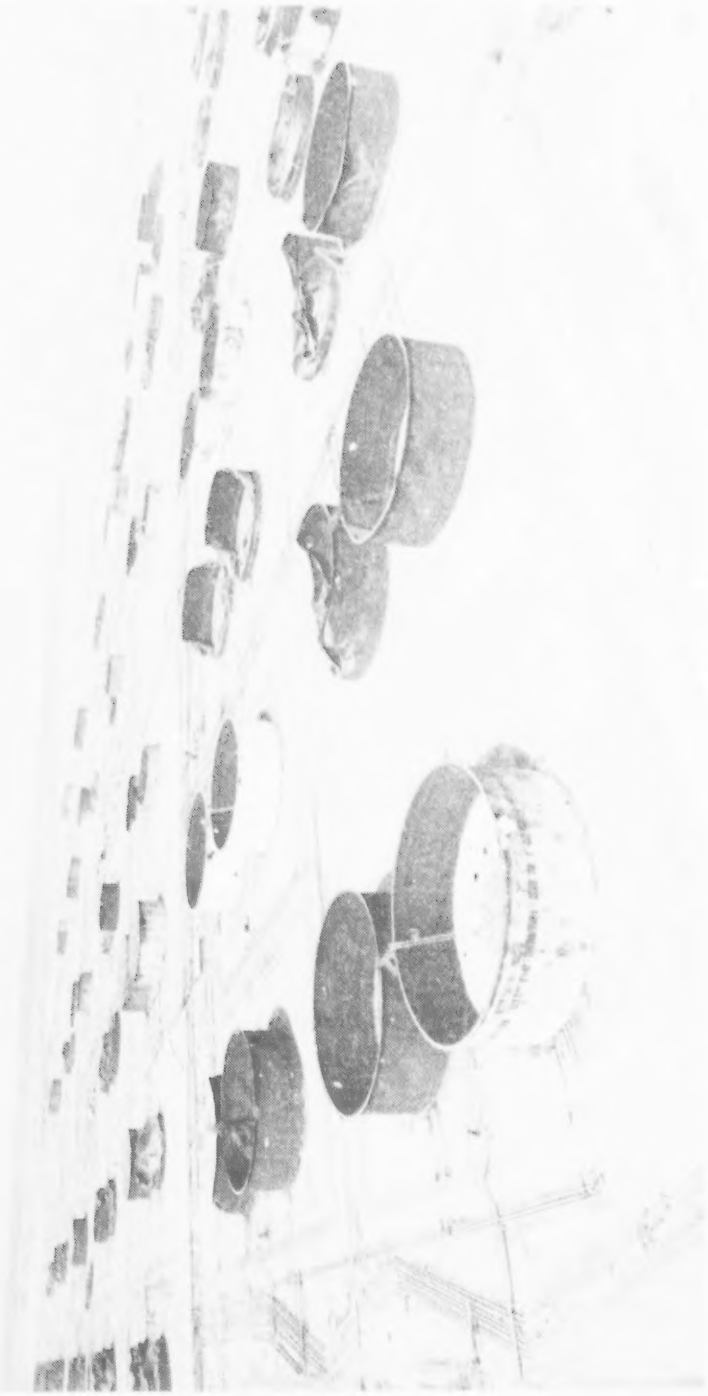
265. The island also contains a 20,000 b.p.d. topping plant, which produces some basic petroleum product needs and was seriously damaged in an air attack. The control centre, a sweetening plant and several large tanks were demolished. The mission was shown around the entire plant and was informed that restoration has been effected in the major areas and the plant is now about 75 per cent complete.

266. The Salman zone, by far the most productive, has a potential of 300,000 b.p.d. and was producing at the 240,000 b.p.d. level at the outbreak of the war. The platform was attacked late in the war with devastating results. Drilling was halted until after the cease-fire. Production has only recently been restored to about 40,000 b.p.d., 15 per cent of the pre-war level.

267. The second drilling area is the Rashalat zone, about 10 kilometres away, also linked to Lavan Island. Several of the Rashalat platforms were attacked from the air with massive destruction resulting. One was completely demolished. Production has still not been restored in this zone.







C. Agriculture, forestry and fisheries

1. Survey of agricultural activities

(a) Introduction

268. Agricultural activities incorporate all productive activities in the field of farming, horticulture, animal husbandry and forestry, as well as infrastructure-related activities such as ground preparation, levelling, drainage, soil enrichment, enhancement and consolidation of cultivation on small plots of land, the securing and movement of water supplies and the reclamation of pastures.

269. The Government estimates that direct losses suffered by the agricultural sector as a result of the war totalled Rls 1,783,377 million as follows:

	Percentage	Millions of rials
Buildings and installations	36.14	644 544
Machinery and equipment	31.23	557 013
Materials and goods	32.62	581 820

270. The direct damage sustained by each subsector is as follows:

	Percentage	Millions of rials
Farming	86.46	1 542 058
Animal husbandry	4.66	83 187
Hunting	0.39	7 101
Forestry	8.15	145 461
Fishing	0.31	5 570

271. In addition, the Iranian authorities estimate that indirect losses in this same sector amounted to Rls 14,173,955 million, the overwhelming proportion having been sustained by the environment. The Government attributes this to the following principal elements:

(a) A reduction in forest cover and the destruction of pastures;

(b) Severe soil erosion;

(c) A quantitative reduction in plant and animal species;

(d) An increase in the problem of pollution.

272. Foreign exchange shortages and the consequent lowering of the import ceiling eventually produced problems and bottlenecks in the agricultural sector such as a fall in livestock and poultry production.

(b) Background

273. It was decided to concentrate the survey of the agricultural sector in the three most affected provinces: Khuzestan, Ilam, Bakhtaran (stretching from Arwand-Kenar in the south-east tip of Khuzestan Province to the northern limit of Bakhtaran Province). Owing to constraints of time, distances involved and the extent of the area in agricultural use, sample surveys were carried out in the war-affected areas, in consultation with the Iranian counterparts.

274. The agriculture is irrigated and/or rainfed, yielding in some places two crops per year. The most important crops cultivated in the three provinces are wheat, barley, date palm, vegetables, chickpeas, cotton, sugar beet and cane, alfalfa, citrus and grapes.

275. The water resources of the area are relatively abundant. Most of the area covered is drained by the river system of the Karkheh, the Dez and ultimately the Karun. Groundwater resources are abundant and underlie most of the major plains. Most of the aquifers are of medium depth, allowing for low-cost extraction.

276. On-farm irrigation practices are traditional, dating back centuries. There is generally poor within-field water distribution and inadequate control of application, largely because of an almost complete lack of land levelling. Salinity problems are particularly prevalent in the low-lying areas, caused either by shallow groundworks and overirrigation practices or, in coastal areas, from sea-water intrusion. Adequate drainage facilities are not provided for most of the land. Off-farm systems consist of an intricate secondary distribution network of mainly earth or stone masonry canals. The main canals are supplied either by direct pumping from the river or by diversion from the river. The overall efficiency of the system is generally low and irrigation scheduling will have to be introduced sooner or later. Modernization will be required and a first step has already been taken in the reconstruction programme by lining the earth canal damaged during the war.

Map 5

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2. War damage in the agriculture sector

(a) Khuzestan Province

277. The bulk of the agricultural damage suffered in the province occurred in the southern and south-western parts. While agriculture as a whole has been severely affected by the hostilities, the crop-production systems, whether irrigated or rainfed, have been particularly hard hit. It is likely that the present situation may well remain that way for a long time or may even worsen in most areas considering the physical scale of the events and the impact they had on the rural population.

278. The mission focused its attention mainly on the border regions, to which the bulk of the damage was confined, and specifically on the production areas surrounding Khorramshahr and Abadan (including Shalamcheh and Minu Island), Azadagan (Dasht) and the plains around Hamidiyeh, Susan-guerd, Howeyzeh and Bostan.

Azadagan region

279. It was reported that before the war the Azadagan cropped area amounted to about 110,000 irrigated and 60,000 rainfed hectares. Development had begun on a further 15,000 hectares in the Hamidiyeh extension programme. The main crops were irrigated and rainfed wheat, irrigated barley, rice, vegetables, fodder, grapes and dates. The areas received water either by means of canals or direct pumping from the river Kharkeh. Traditional irrigation methods were practised, consisting of a pump and a feeder canal supplying water to branch and tertiary canals. In a number of instances, water was being pumped directly from the river to fields.

280. It was reported that the area was equipped with some 430 pumping stations (65 horsepower (HP) each) each one having a shelter (25 square metres), an intake and an offtake unit and a 3-kilometre delivery canal. Deep-well irrigation was also practised. The water distribution system consisted of large intricate networks of medium to small earth canals. Larger feeder units were generally lined. The average farm mechanization was 0.7 HP per hectare.

281. The mission was informed that of the 110,000 hectares of irrigated crops, 40,000 hectares have suffered total destruction through compacting and distortion of the topography. This was said to be a direct consequence of military manoeuvres of heavy equipment and vehicles, the construction of an enormous amount of revetments and vast stretches of high embankments and underground tunnels. These areas will require intensive land levelling, deep ploughing for soil aeration and application of land improvement techniques. In addition, they will have to be cleared of mines and destroyed equipment.

282. It was also reported that another 11,000 hectares were deliberately flooded during the war, leading to anaerobic conditions highly detrimental to soils. The remaining 59,000 hectares suffered an average rate of destruction varying between 20 and 50 per cent, of which about 32,000 hectares degraded as